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August, 1955

SOAP *and* Chemical Specialties

In this issue...

Detergents in Britain claim a third of market

* * *

Aerosol regulations—up-to-minute summary

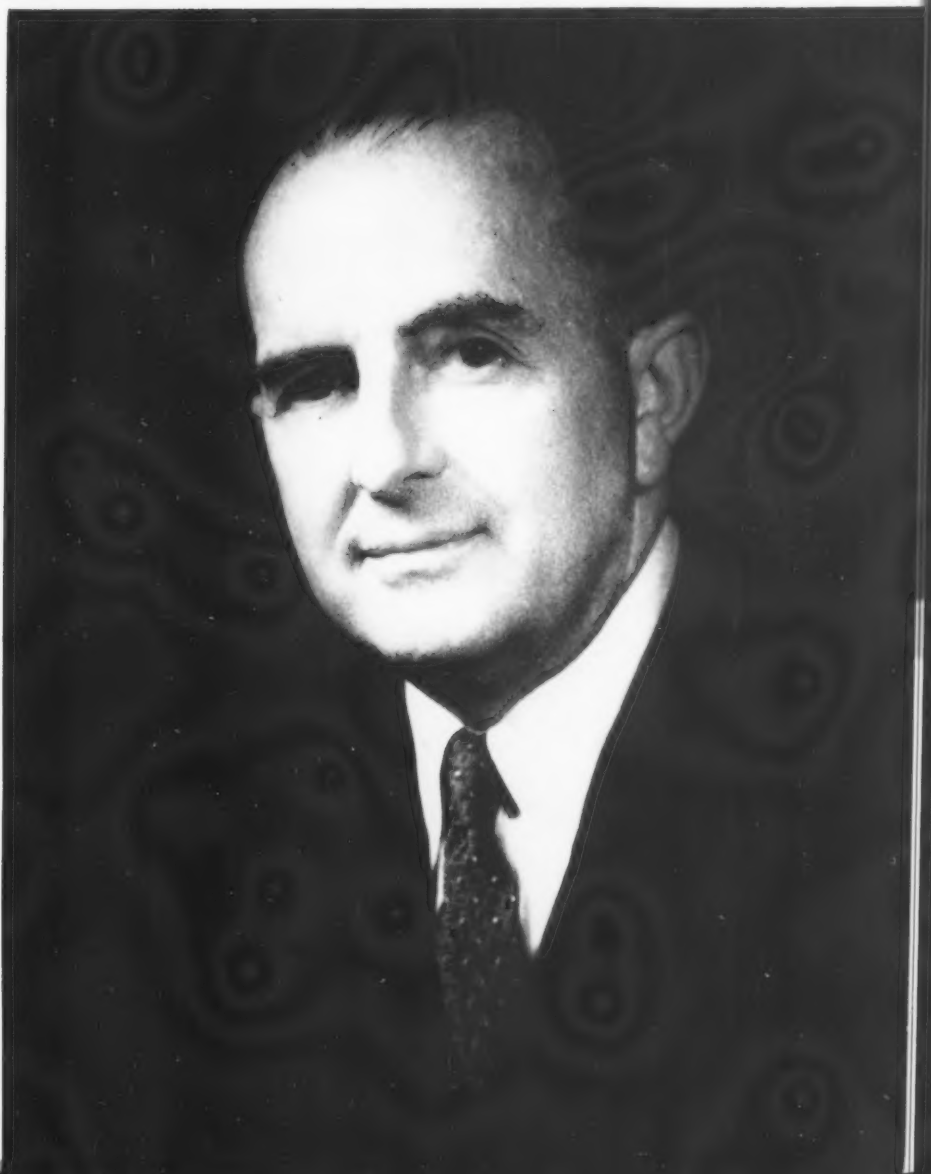
* * *

New drugs open fields for medicinal soap use

* * *

Perthane and Strobane rated as mothproofers

Cover photo . . . William L. Sims II, newly elected president of Colgate-Palmolive Co., headed the international company prior to his present appointment. He served also as executive vice-president of the parent company, with which he has been since 1924. See story on page 105.



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OUT is a beautiful Medical Blue color and is labeled, directly on the bottle, in rich Sanitary White . . . a color and container combination that cuts sales resistance, instills confidence.

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SUPER CAND-DOX IS REMARKABLY MORE ANTI-SLIP THAN ANY OTHER WATER EMULSION FLOOR WAX in the class of products designed to give beautiful appearance and to be highly resistant to dirt retention (durability)

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Volume XXXI, No. 8 August, 1955

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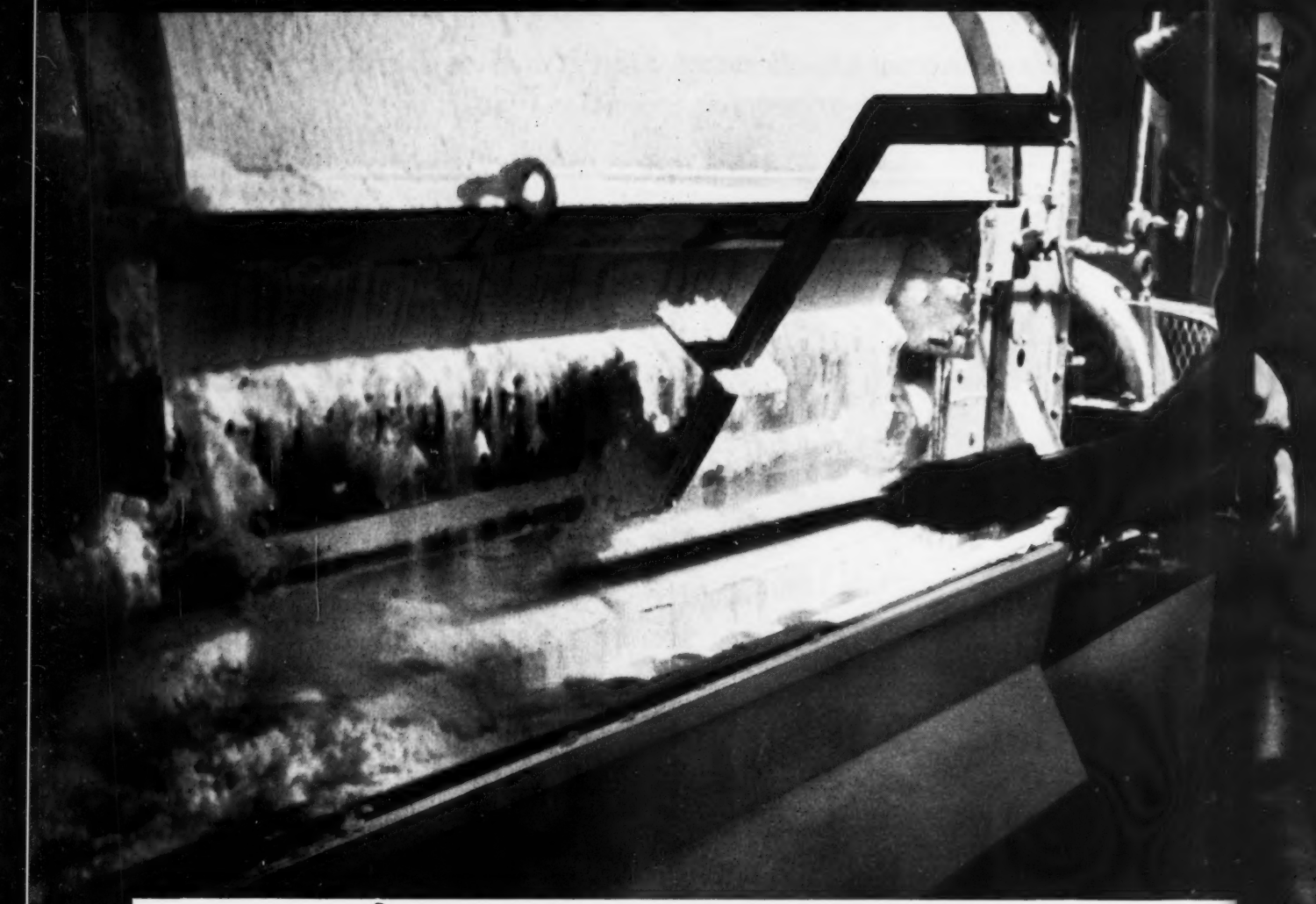

TWIN DRUM DRIERS process sodium phosphate from mixing tank and pass it into elevator which moves it into position for screening.

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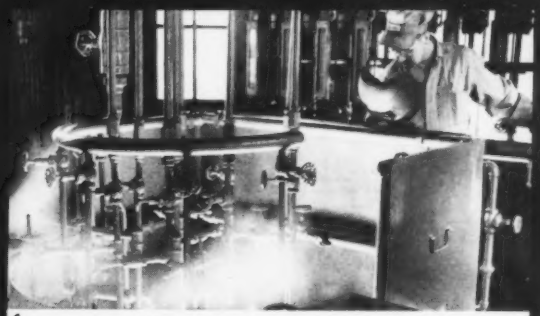
NERVE CENTER for entire department is this large control board. Numerous gauges give instantaneous readings and make permanent records to assure Monsanto customers of quality control.



SHIELDED FACE of Monsanto technician peers into burning tower where liquid phosphorus feeds into jets of compressed air, oxidizes to P_2O_5.

LOADING AREA of Monsanto's Trenton plant shows convenient facilities for the largest truck - and rail carriers near the brick main building.

HOPPER CAR on special spur in Monsanto plant area takes on milled sodium triphosphate through conveyor tube from trackside silo.

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CHEMICALS—PLASTICS

SERVING INDUSTRY... WHICH SERVES MANKIND

liquid detergent

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LDA

A 100% active, fatty acid alkylolamide and nonionic in character. It provides superior foam stability, detergency, and gives good sudsing quality in the presence of grease. LDA is also noted for being a splendid thickening agent, and an auxiliary emulsifier helping to counteract the defatting action of alkyl aryl sulfonates.

B-153

An ethoxylated nonyl phenol sulfate, 60% active. It is a clear amber liquid with a mild, pleasant alcohol odor. B-153 gives a high and closely knit flash foam to liquid dishwashing detergents. It is also a good auxiliary detergent and is relatively mild to the skin.

NP-10

A 100% active ethoxylated nonionic. It imparts excellent grease emulsification to liquid dishwashing detergents and makes possible better drainage, helping to eliminate film. Among its other advantages NP-10 can aid in lowering the cloud point of a liquid detergent formulation.

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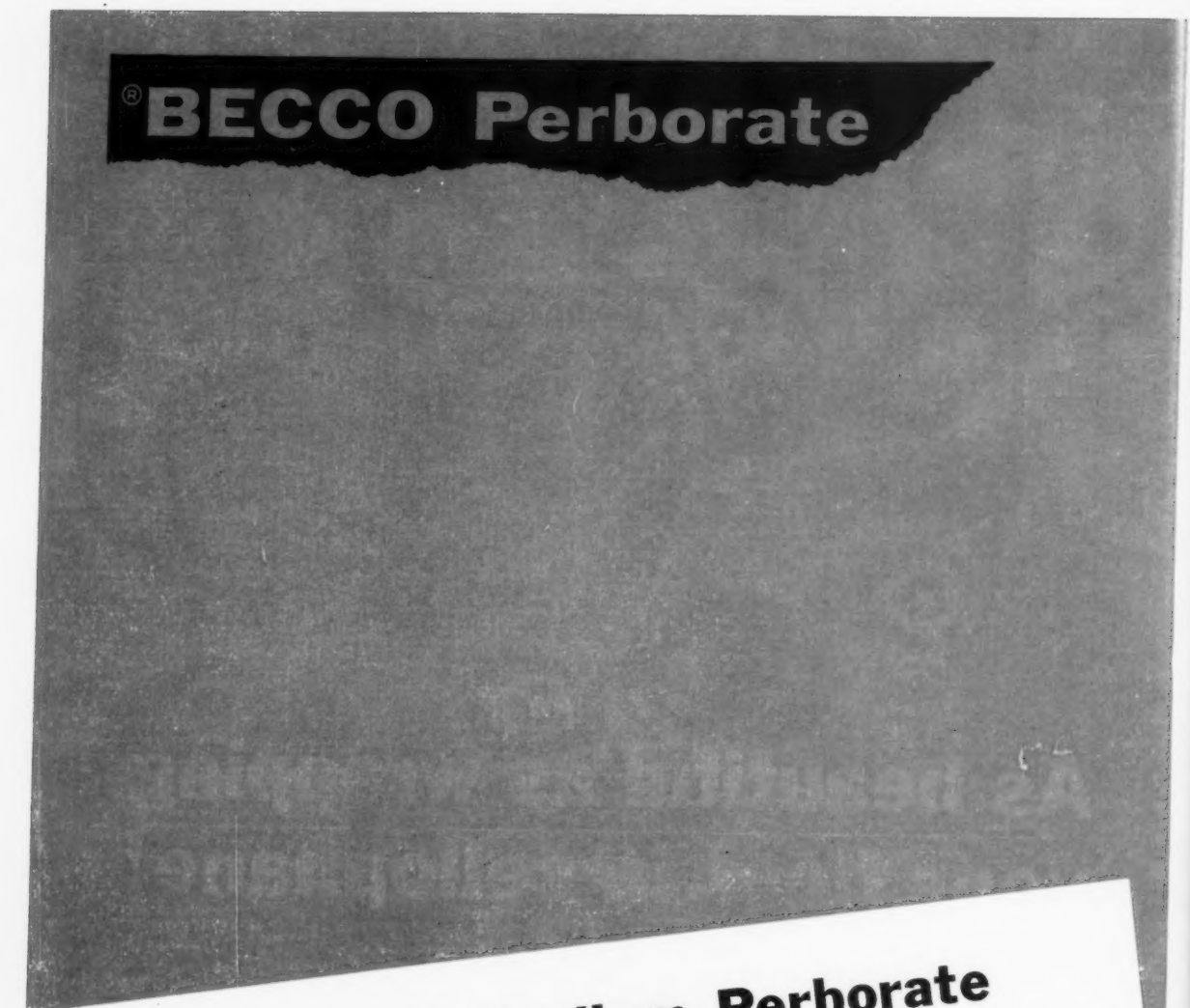

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Form	—White crystalline powder
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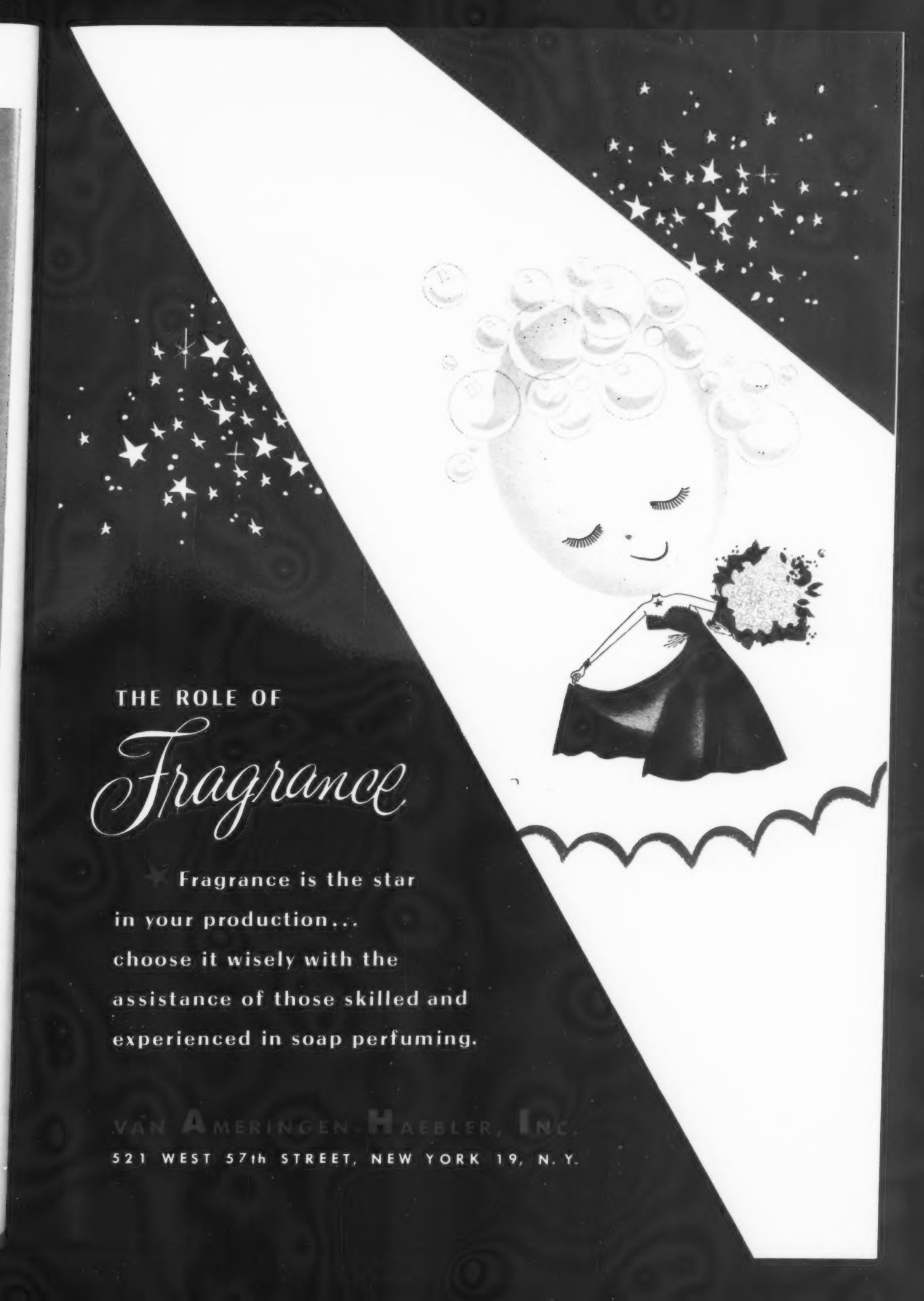
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DU PONT *Duponol WA PASTE**

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STABLE COLOR means your shampoo will stay attractive through heat, light and aging. "DUPONOL" WAQ and "DUPONOL" WA Paste were designed for the *whitest* shampoos, pearlescent or plain. Further, their bland, clean odor won't ever interfere with the perfume you choose.

ECONOMY is the result when you use these Du Pont detergents, because you need less thickener. And, with only minor changes in formula, "DUPONOL" WAQ and "DUPONOL" WA Paste may be interchanged . . . used for either shampoo.

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DU PONT *Duponol WA PASTE**

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Company _____

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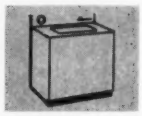
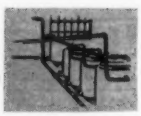


Automatic Laundry Detergents. Where the *right* amount of foam is necessary to promote effective de-soiling of the clothes and satisfactory removal of the soil.



Dairy Cleaning Compounds. For "in place" cleaning of pipe-line systems. TRITON CF-10 promises to simplify rinsing and will help eliminate germ-breeding residues.

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CHEMICALS FOR INDUSTRY

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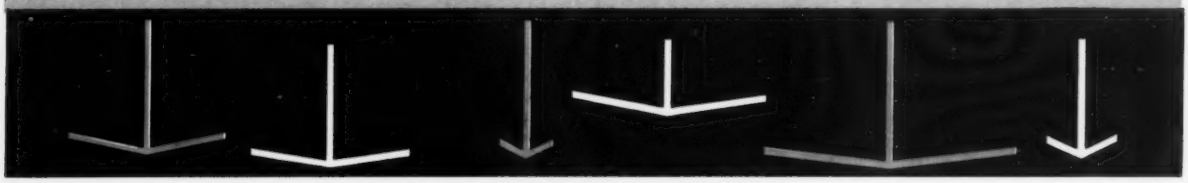
There have to be reasons why a company is the leader



Oronite is the leading producer of detergent raw materials

To hold the position, year after year, as the world's largest producer of detergent raw materials, Oronite must maintain the highest standards of product quality and service. Beyond this, Oronite conducts a continuous research program on detergents that is second to none. Add together product quality, service, continuous research and competitive pricing and you have the reasons why Oronite is the world leader.

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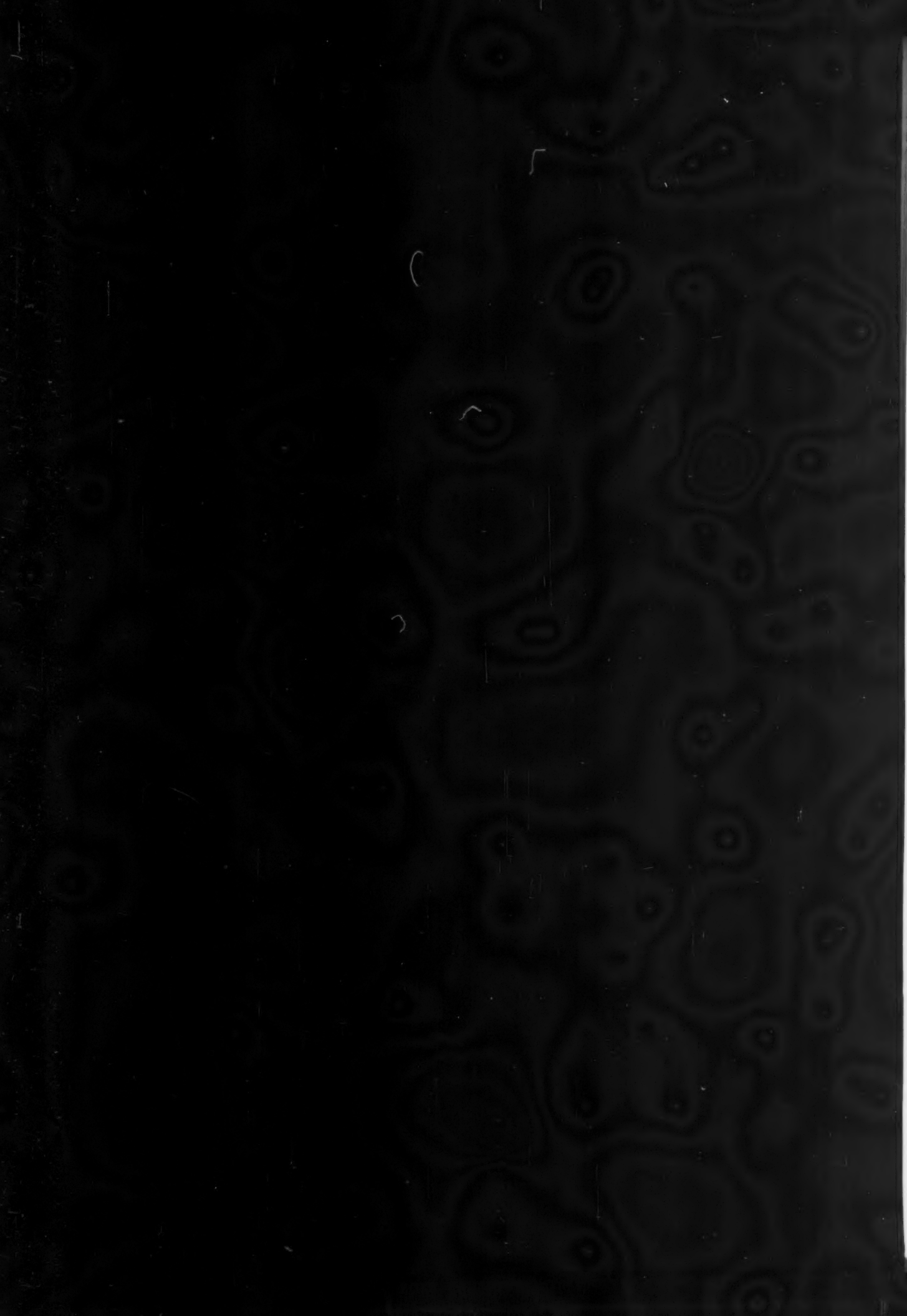
Mercantile Securities Building, Dallas 1, Texas
Carew Tower, Cincinnati 2, Ohio



After Closing . . .

Schwartz Uncle Sam Mgr.

Election of Herman Schwartz as secretary-treasurer and general manager of Uncle Sam Chemical Co., New York, was announced last month. Louis Kornicker, former treasurer and production manager, has resigned from the company to continue his studies at Columbia University. Howard Kornicker, one of the firm's founders, remains as president.

Mr. Schwartz has been with Uncle Sam since 1937 with the exception of a leave of absence for military service. He acquired his initial interest in the firm and became one of its officers in 1947. The substantial financial interest which he now owns will enable him to improve the packaging, merchandizing, and processing of orders of the 35 year old organization. Uncle Sam caters primarily to the sanitary supply jobber as a source of waxes, polishes, disinfectants, deodorants, soaps, cleaners, insecticides, and related products.

— ★ —

Elects McInerny Secy.

Gilbert S. McInerny was elected secretary of American Home Products Corp., New York, it was announced last month by Alvin G. Brush, chairman of the board. General attorney and assistant secretary for the corporation since 1949, Mr. McInerny joined the firm's legal department in 1941. He served as lieutenant in the Navy Air Force from 1943 to 1946, when he rejoined American Home Products as associate counsel.

— ★ —

Chemical Service Expands

Chemical Service of Baltimore, Inc., Baltimore, recently announced the letting of contracts for the construction of an addition to its plant. The new 20,000 square foot addition will occupy the site of a smaller warehouse destroyed by fire last April. It will be devoted chiefly to the manufacture of waxes and floor seals. Expected to cost about $100,000 the new facilities are scheduled for completion in four months.

— ★ —

Kersten is Campbell VP

Earl W. Kersten has joined Campbell Chemicals, Inc., St. Louis, as vice-president in charge of sales, it was announced last month by Carl N. Campbell, president. Mr. Kersten was formerly associated with Dodge & Olcott, Inc., New York, as division manager for the Atlantic-Georgia area. In his new post he will handle sales for all "Camicide" insecticides and repellents and for "Sanitaire" deodorizer.

— ★ —

New "RAX" Booklet

Prentiss Drug & Chemical Co., New York, last month published a new and revised edition of its booklet on "Rax" powder, the firm's brand of warfarin concentrate. The physiological action of the product is explained and manufacturing information, bait formula and advice on correct use are included. Copies are available from Prentiss at 110 William Street, New York 38.

— ★ —

Evalyn Sarich Dies

Evalyn Sarich, metropolitan sales manager for Warwick Wax Co., Long Island City, N. Y., died on July 30, after a long illness. With Warwick since May 1942, she became metropolitan sales manager in 1952. Prior to joining the wax firm she had been associated with L. Sonneborn Sons, Inc., New York. Miss Sarich was active as a member of the Chemical Specialties Manufacturers Association, the American Chemical Society and other professional groups.

— ★ —

Becco Engineer a General

Clifford L. Sayre, development chemical engineer for Becco Chemical Division, Buffalo, N. Y., and other chemical divisions of Food Machinery and Chemical Corp., has been appointed Brigadier General, U. S. Chemical Corps Reserve, it was announced recently. He is the first reserve officer to attain the rank of General in the corps.

New Wax Center: This aerial view shows the magnitude of the new shipping center opened by S. C. Johnson & Son, Inc., seven miles west of its Racine, Wis. plant. The center — at Waxdale, Wis. will hold 15 million pounds of wax products for distribution throughout this country and around the world.

T. L. Huge Succeeds Father

Thomas L. Huge succeeds his father, Louis G. Huge as president of Huge Co., St. Louis, it was announced recently. Louis G. Huge, 65, died July 9. He founded the company bearing his name in 1930 and in 1950 added a sanitation consulting division known as American Sanitation Institute, specializing in the food field. Huge makes "Excelcide" insecticides, rodenticides and application equipment specifically designed for food plant usage.

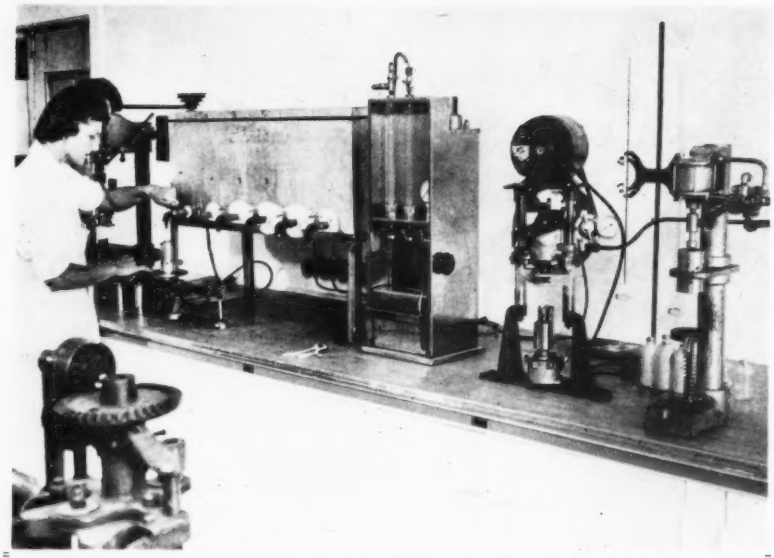
The new president has served as vice-president of Huge Co. for the past 10 years and as technical director of American Sanitation Institute since its inception.

—★—

NACA Meets Sept. 7-9

The importance of research and economics for the pesticide industry will be the keynote of the 22nd annual meeting of the National Agricultural Chemicals Association, to be held at Spring Lake, N. J., Sept. 7-9. At the opening session the following talks will be presented: "A Look Into the Economic Future" by H. E. Luedicke, editor, Journal of Commerce, New York; "Major Trends in the Pesticide Industry" by Warren Moyer, president, Chipman Chemical Co., Bound Brook, N. J.; "Safety is Everybody's Business" by A. W. Mohr, president, California Spray-Chemical Corp., Richmond, Calif.; and an address by the association's president, W. W. Allen, Down Chemical Co., Midland, Mich.

On the second day John T. Thurston, American Cyanamid Co., Stamford, Conn., will speak on "Industry Research Looks Ahead" and G. E. Lehker, professor of entomology, Purdue University, Lafayette, Ind., will present a talk on "A New Approach to Agricultural Chemical Relations," and S. W. Simmons, U. S. Public Health Service, Atlanta, will discuss "What Government Research Means to the Pesticide Industry." The report of the executive secretary of the association, L. S. Hitchner, will also be delivered on the second day.



Complete experimental production facilities for both refrigerated and pressure filling of aerosols are included in G. Barr and Co.'s expanded product research and development laboratory. Test batches of new and re-formulated products are manufactured in the laboratory and then placed in aging ovens so that product stability and shelf life can be determined. Here, Helen Guzles, laboratory technician fills testing samples.

The third and final session will feature a panel discussion on the Miller Amendment. Moderator will be Mr. Hitchner, and panel members will include: Wilton B. Rankin, U. S. Food and Drug Administration; W. G. Reed, U. S. D. A.; and Charles W. Palm, New York State College of Agriculture at Cornell University, Ithaca.

—★—

Licenses Japanese Firm

Risdon Manufacturing Co., Naugatuck, Conn., recently announced the granting of an exclusive license to Aerosol Industries Corp., Osaka, Japan. This arrangement permits the firm to manufacture and sell the complete line of Risdon aerosol dispensing valves in Japan.

—★—

Mich. Chem. Shows Profit

Michigan Chemical Corp., St. Louis, Mich., showed for the six months' period ended June 30, 1955, a net income of 25 cents per share of common stock against a loss of 18 cents in the comparable period of 1954. Net earnings after taxes for the period under review were $137,838 against a loss of $94,299 in 1954. In the 1955 period, sales amounted to $3,311,911 compared with $2,934,942 in 1954.

—★—

Microbiology Meeting

Sessions on fungicides and on microbiological deterioration are part of the program to be presented by the Society for Industrial Microbiology at the annual meeting of the American Institute of Biological Sciences. This meeting will be held on the Michigan College campus at East Lansing, Sept. 5-8.

The symposium on fungicides, entitled "Molecular Configuration Influences on Bio-Activity (fungicides)", includes the following papers:

"Aromatic Fluorine Compounds as Fungicides" by G. C. Finger, Illinois State Geological Survey, Urbana; "Fungitoxicity of Substituted Triazines," by Paul H. Schuldt, Boyce Thompson Institute for Plant Research, Yonkers, N.Y.; "Relationship between Physicochemical Properties and Fungicidal Activities of 6-Anilino-2,4-dichloro-s-triazines." by H. P. Burchfield, Boyce Thompson Institute; "The Biological Activity of Some N-Trichloromethylthio Compounds," by A. R. Kittleson and T. W. Reed, Esso Research and Engineering Co., Linden N.J., and Cal-Spray Chemical Corp., Haddonfield, N. J.; "Fungitoxicity of Dioxane, Dioxalane, and Dioxaspiro Undecane Derivatives," by Saul Rich and James G. Horsefall,

Conn. Agricultural Experiment Station, New Haven; "The Antimicrobial Activity of Some Structural Analogs of 3-Benzylrhodanine," by C. K. Bradsher, F. C. Brown, and E. F. Sinclair, Duke University, Durham, N. C.; and "Structure-Correlation Studies of Some Fungicidal Compounds," by George A. Livingstone and Karl F. Heumann, Chemical-Biological Coordination Center, National Research Council, Washington, D. C.

The symposium on microbiological deterioration will include the following papers among others:

"Experiments in Newer Preservative Treatments of Wood," by Roy H. Baechler, Forest Products Laboratory, U.S.D.A., Madison, Wis.; "Antimicrobial Penetrant Sealers for Wooden Surfaces and also refrigerated Transportation Facilities," by J. H. Richardson and W. S. Ogilvy, Armour & Co., Chicago; "Some Auxiliary Effects of Textile Fungicides," by C. H. Bayley, National Research Council, Ottawa, Canada; "Cyanoethylation as a Means of Effecting Resistance to Microbiological Attack," by Lorence Rapoport, American Cyanamid Co., Stamford, Conn.; "A New Method of Application of Copper-8-quinolinate," by Patrick J. Hanna, Engineering Research and Development Laboratories, Fort Belvoir, Va.; "The Distribution of Copper-8-quinolinate between Chloroform and Aqueous Solutions of Varying pH," by A. Witt Hutchinson, Mary B. O'Hara, and Arthur Rose, Applied Science Laboratories, Inc., State College, Pa.; and "Fungicides for the Consumer—A Market Survey," by Charles C. Yeager, Scientific Oil Compounding Co., Chicago.

★

Columbia-So. Names Two

Appointments of John F. Dockum and Brooks M. Dyer as managers of newly-created sales groups were announced recently by Columbia-Southern Chemical Corp., Pittsburgh. With the company for the past 32 years, Mr. Dockum has been named to head chrome chemical sales. He has held the post of assistant director of sales since 1952. In his new duties he is assisted by Charles E. Grant who joined the company Aug. 1.

Mr. Dyer, who has been with Columbia for 12 years, will supervise the calcium chloride sales group. He will be assisted by T. D. Williams, formerly of the Calcium Chloride Institute. For the two years preceding this appointment Mr. Dyer also was assistant director of sales.

New Amphoteric Agent

The development of a new amphoteric surface active agent has just been announced by Miranol Chemical Co., Irvington, N. J. Designated "Miranol C2M Conc.", the product is said to be non-irritant to skin and eyes. It foams instantly and profusely, and exhibits good temperature stability, according to the maker. The new amphoteric is described as a dicarboxylic analogue of the coconut derivative of the "Miranol M" series.

Suggested applications for the new surface active agent include shampoos, hand soaps, rug and upholstery shampoos and all household and industrial cleaning formulations where absence of irritation is desirable.

★

Ward Succeeds Griffin

Justus C. Ward was recently appointed assistant head, pesticide regulation section, Plant Pest Control Branch, Agricultural Research Service, U.S.D.A. He succeeds E. L. Griffin who retired. In his new post, Mr. Ward directly supervises all of the technical activities of the section.

Mr. Ward joined the U. S. Department of Agriculture in 1948 as chief, pharmacological and rodenticide section of the Insecticide Division and retained this position until his recent appointment. His term as head of the section covered the period when safety evaluations and precautionary labeling as well as control of rodenticides first became subject to regulations by Federal Law.

Justus C. Ward

Prior to going with U.S.D.A., Mr. Ward served with the U. S. Biological Survey, control methods laboratory, Denver, Colo. He spent 20 years with this agency and its successor, the wildlife research laboratory of the U. S. Fish and Wildlife Service. Both laboratories are concerned with methods of controlling pest mammals. Before going into Federal service in 1928 Mr. Ward had been director of the soils laboratory of the Colorado Experiment Station since 1922.

Mr. Ward served as chairman, rodent control sub-committee, insect control committee, Office of Scientific Research and Development, and the National Research Council throughout its entire history during and shortly after World War II. He is chairman, committee of toxicity and antidotes, Association of American Pesticides Control Officials, and is a member of the committees on pesticides and on toxicology, American Medical Association; committee on chemical poisons, American Public Health Association; committee on insecticides, World Health Organization; and a liaison member, food protection committee, National Research Council. He is also a Consultant to the Technical Development Laboratories, Communicable Disease Center, U. S. Public Health Service, Savannah, Georgia.

The other assistant head of the section is John T. Coyne whose appointment was noted in SOAP sometime ago.

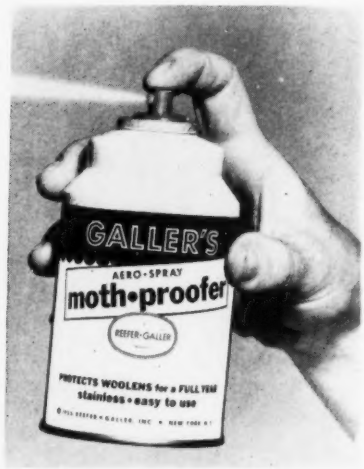
★

Carl Lamm Visits Europe

Carl Lamm, president of Lamco Chemical Co., Boston, returned last month from a European trip. Most of Mr. Lamm's time was spent in Germany, where he worked on development of floor maintenance products with the research staff of Gottlob Epple Mineraloelwerk, Bad Cannstatt/Stuttgart. Before coming to the United States in the 1930s, Mr. Lamm was associated with this firm for many years.

Aerosol Moth Proofer

A new pressure packed moth proofer was introduced recently by Reefer-Galler, Inc., New York.



Claimed to kill flying moths, eggs and larvae, the product is said to protect woolens for a full year. The formula does not contain DDT, the active ingredient being 4.7 percent diethyl diphenyl dichloroethane. A 12-ounce can retails at $1.79.

—★—

Lever Advances Mumford

Election of Milton C. Mumford as executive vice-president of Lever Brothers Co., New York, was announced early last month by William H. Burkhart, president. Mr. Mumford joined Lever Brothers a year ago as vice-president and two months ago was elected a director of the company. Previously he was vice-president of Marshall Field and Co., Chicago, and general manager of Fielderest Mills, the company's textile manufacturing division with headquarters in New York. In his new position, Mr. Mumford fills the vacancy left when Mr. Burkhart became president, succeeding Jervis J. Babb who moved up to chairman.

—★—

NSSA Meeting Dates

Dates of regional meetings of the National Sanitary Supply Association, just announced by Leo J. Kelly, executive vice-president of NSSA include the following: Southwestern, Shamrock Hotel, Houston, Tex., Sept. 23-24; Western, Sheraton Palace Hotel, San Francisco, No. 3 and 4; Eastern, Penn-Sherwood Hotel, Philadelphia, Oct. 11-12.

The Eastern Regional meeting will be a one-day affair, with a hospitality party to be given Oct. 11, the evening before the all-day meeting, Oct. 12.

The Sixth Eastern Regional Meeting will be highlighted by two panel discussions. The first will cover sales problems in the field. Distributor and manufacturing salesmen will participate. Market research will be discussed by a panel of three experts on the subject. Russell Jackson of the Florida department of sanitation will speak on the problems of a sanitarian. A group luncheon and banquet will highlight the social phase of the meeting.

Charles Solly of Harley Soap Co., Philadelphia, is general chairman for the meeting, aided by co-chairmen Burton L. Feinson of American Dispenser Co., New York, and Jack Kahn of Windsor Wax Co., Hoboken, N. J. Mr. Kahn is national vice-president and Mr. Feinson eastern regional vice-president of NSSA. H. E. Galer of Galer & Hults, Inc., Philadelphia, is chairman of the program committee.

—★—

GE Advances Reilly

Thomas H. Reilly was recently appointed manager of advertising and sales promotion for the silicone products department of General Electric Co., Waterford, N. Y.

—★—

Sylvain Fontanes Dies

Sylvain Fontanes, partner and managing director of Givaudan & Cie., Paris and Lyons, France, an associate company of Givaudan-Delawanna, Inc., New York, died July 27. He had been with the firm for more than 55 years. He was honorary president of the National Syndicate of French Manufacturers of Synthetic Aromatic Chemicals. In 1950, he was honored by the French Government with its highest award, the Legion of Honor.

Edwards to Robbins Co.

William R. Edwards has joined George B. Robbins Disinfectant Co., Cambridge, Mass., as president and general manager, it was announced recently. He was previously associated with Pacific Mills, Lawrence, Mass.

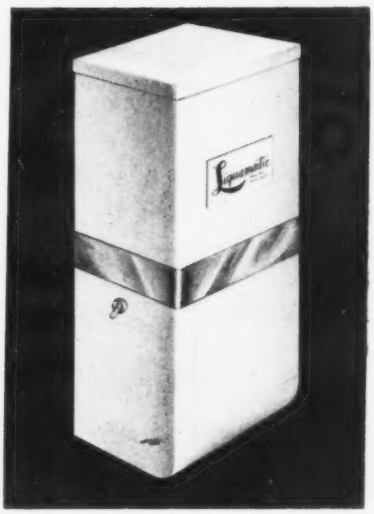
At the same time the company announced election of Paul L. Robbins as vice-president in charge of manufacturing. He is a grandson of Paul L. Robbins, founder of the firm, and son of the late Guy P. Robbins.

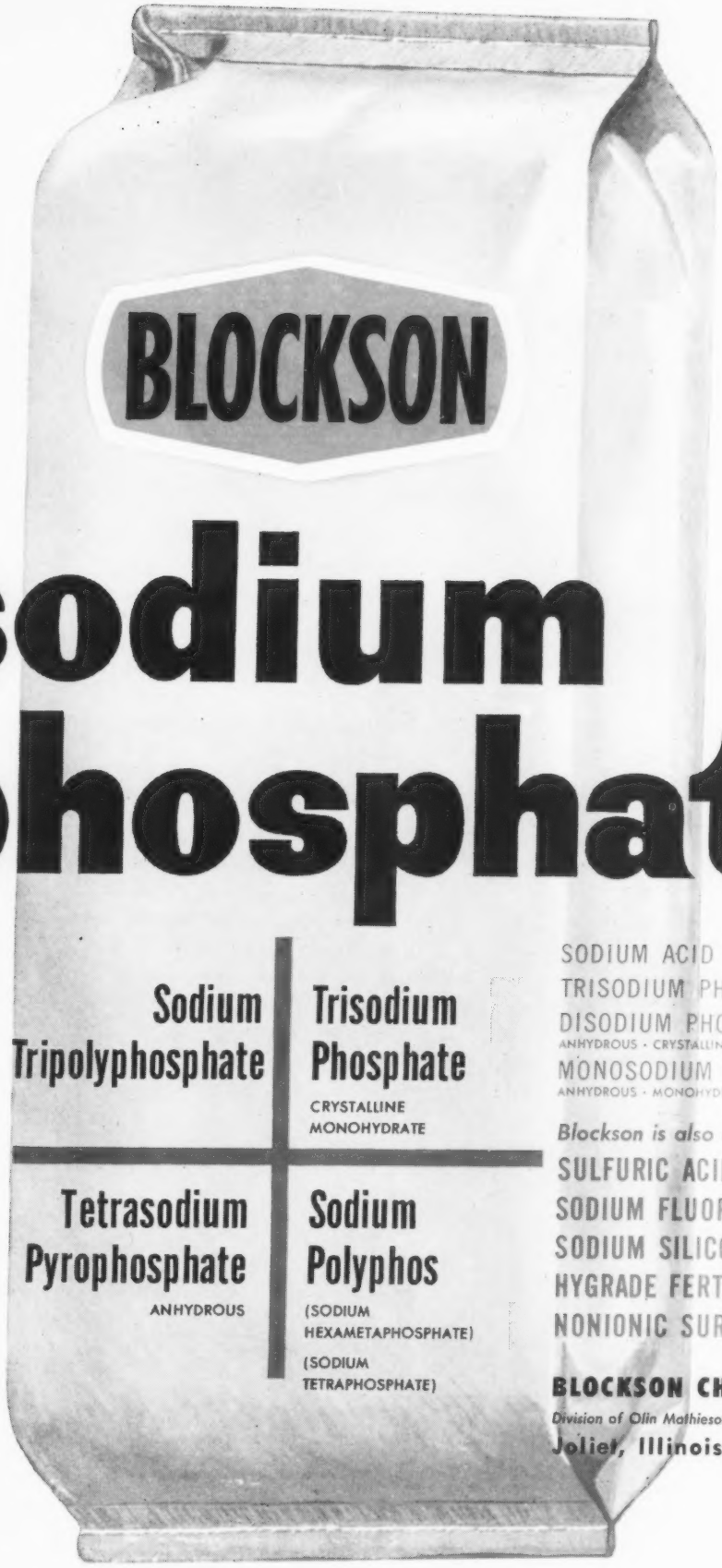
—★—

New Liquid Dispenser

"Liqua-matic", a new, fully automatic liquid dispenser, designed by Marshfield Manufacturing Corp., Long Island City, N. Y., is now being introduced through laundry suppliers for use in automatic laundries on eight and nine pound automatic washing machines. The unit automatically adds one full ounce of liquid fabric softener, bleach or bluing to the last rinse. The reservoir holds enough for about a week's washing.

The dispenser attaches to the wall or washing machine. It measures 11⅛ inches high, five inches wide and 4⅛ inches deep. The 16 gauge metal is finished in a white gloss baked enamel. "Liqua-matic" uses regular 110 volt current supplied to the washing machine.





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MONOHYDRATE

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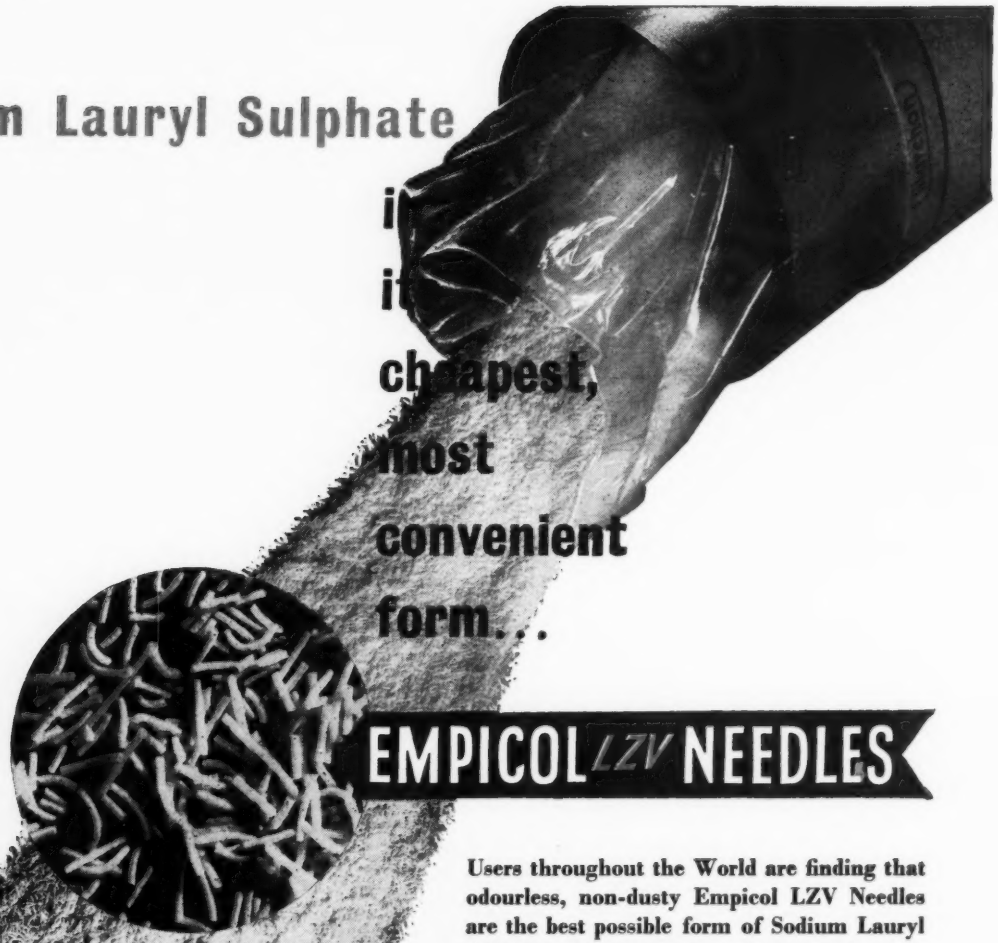

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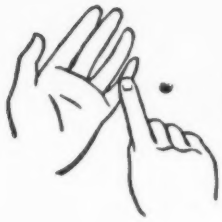

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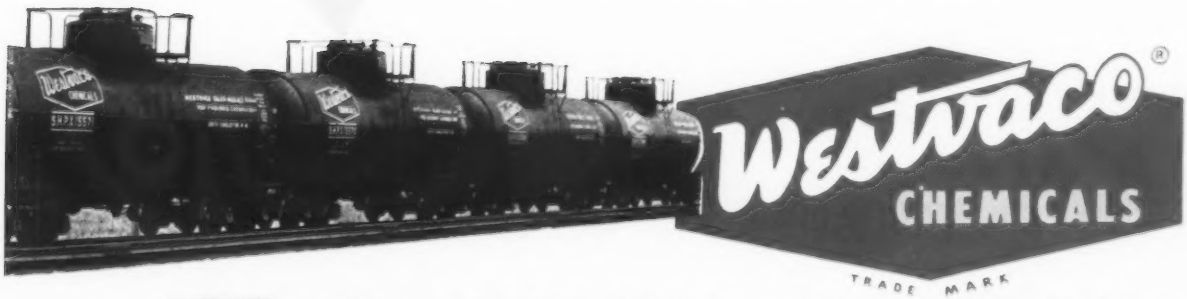

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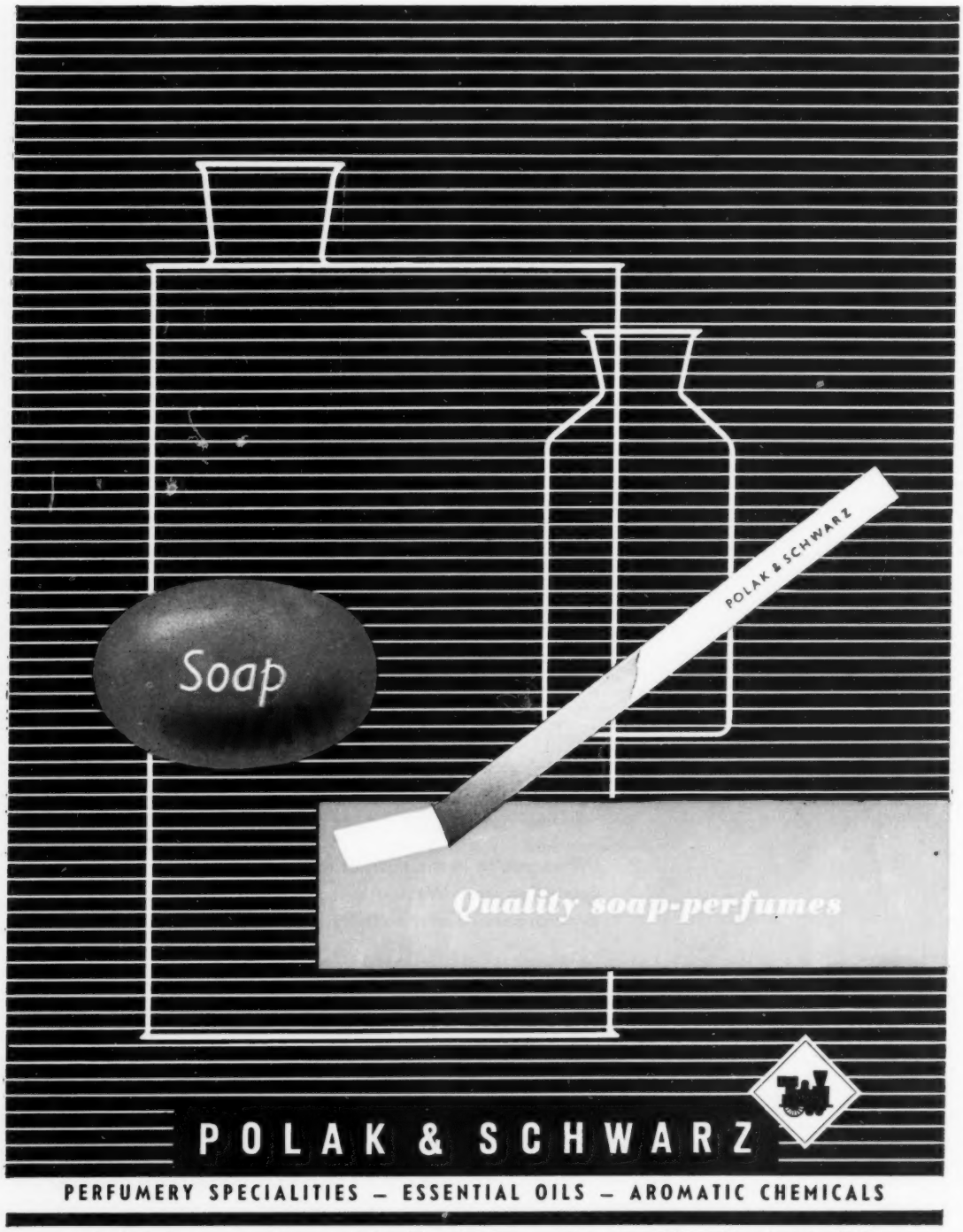

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Color 5¼" Lovibond Yellow	2 — 15	30 max.
Unsaponifiable	0.75% max.	—
Saponification Value	202 — 204	193 — 196
Acid Value	201 — 203	10 max.
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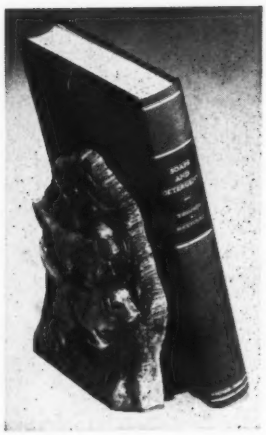

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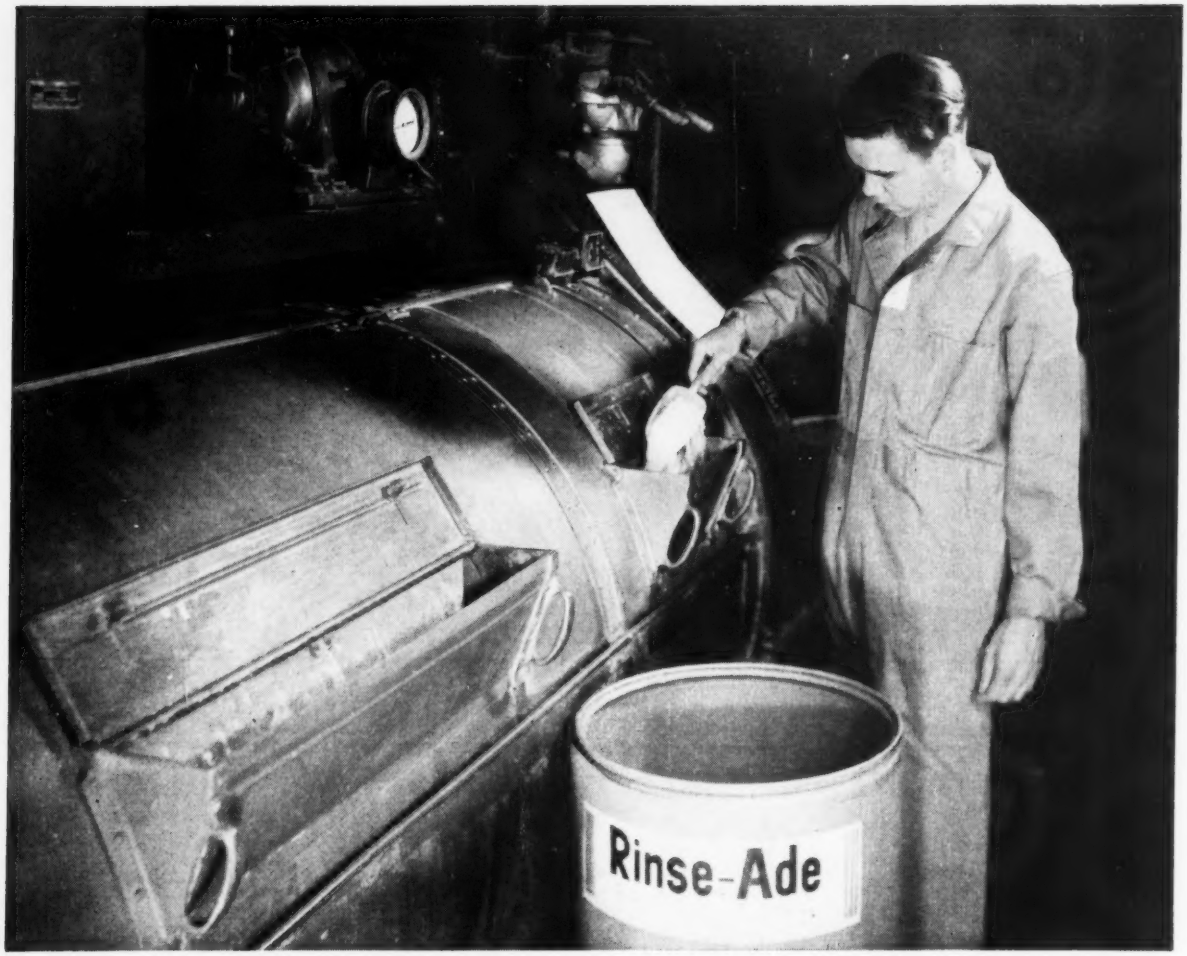

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VC55-8

. . . in brief

as the editor sees it . . .

AEROSOLS . . . . The Federal Trade Commission is in the process of studying certain aspects of the aerosol industry. Letters of inquiry are being sent to both fillers and vendors.

While this action on the part of the FTC represents no criticism of practices in the industry as a whole, complaints are understood to have been received by the Commission on the amount of fill of certain products.

The industry is asked to cooperate in furnishing the necessary information, which eventually may, if the aerosol industry so desires, result in the development of trade practice rules.

•

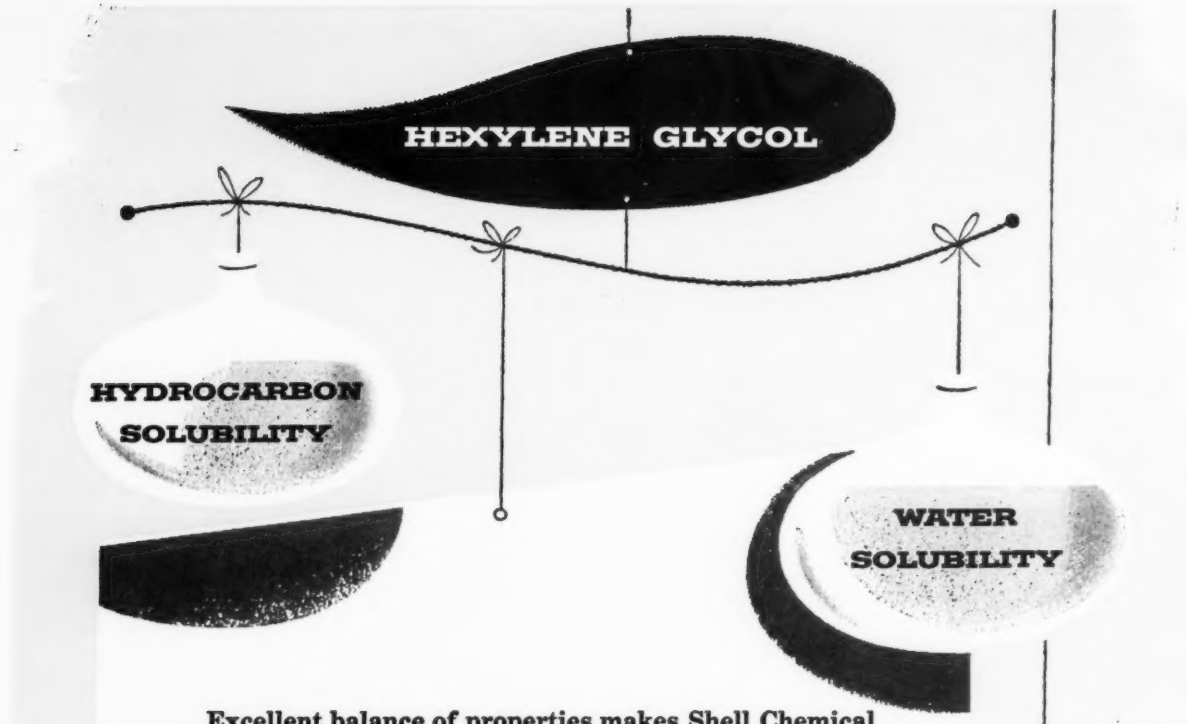
COMPLAINT . . . . Because everybody and his brother seem to be intent upon horning in on the sale of sanitation supplies, some regular sanitary supply jobbers have set up a howl. They complain of new competition coming into the field right along,—hardware dealers who open up sanitation chemical departments; paper, restaurant and hotel supply houses who are developing sanitation supply sections; local basic chemical dealers who are edging into sanitary supplies; even mortician supply houses moving into the sanitary supply field. The regular jobbers don't like the new competition and are frank to say so. But what to do about it?

The complaints which we have observed seem to imply that the manufacturer should do something about this newer competition, should in some manner or form hold an umbrella over the old established jobber. Just how he could do this in a practical way, we fail to see. We feel that the problem is one for the jobber himself, to improve his selling and his service so that the newcomers might have a tough time of it. The sanitary products business has expanded, is still expanding. If the old line jobber loses new business to the newcomer, whose fault can it be? Maybe instead of complaining to their suppliers, these jobbers should try putting on an extra salesman or two. They have a head start on the newcomers. Why can't they cash in on it?

•

REVERSAL . . . . When a New York appellate court recently reversed a lower court ruling involving liability based upon alleged negligence in advertising, it rendered a decision which may be very important to marketers of consumer products, particularly household chemical specialties. The plaintiff claimed hand injury due to using a popular household synthetic detergent. The lower court ruled that the manufacturer was negligent in advertising that the detergent was "kind to hands." The decision, incidentally, was based on testimony of a defense witness that under certain conditions 20 out of 300 people showed "redness of hands" after being exposed to the detergent. The tests, it should be pointed out were conducted in winter.

In its reversal, the appellate court held the lower court had erred in basing liability upon negligence in advertising. It further points out that negligence, whether in assuring the public that the use of a product involves no risk or in failing to warn of its potential danger, "can be established only by proof of knowledge of potential danger to a number of persons in using its product." It also held that mere redness of hands or chapping of a housewife's hands does not constitute such proof.



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Had the original decision been allowed to stand, it would have imposed a heavy burden on companies advertising and marketing many products for general consumer use. In addition it would have opened ever wider the flood gates of product liability suits based on such flimsy evidence as mere redness of housewives' hands, not attributable to any particular product or thing out of the many to which they might be exposed.

•

BURN . . . . If the legal departments of some of the soapers don't check their advertising, radio and television phraseology, we have a hunch they should start about now. We have reference here in particular to the persistant use of the term, "detergent burn." Heaven knows that there are enough law suits already growing out of imaginary injuries supposedly caused by detergents, soaps and other products of a chemical nature. Why invite others to carry their chapped hands into court?

That there is a small percentage of people who are allergic to detergents is quite obvious. The same applies to salt, soap, hand lotion or lobster. But to suggest to them and to others as well that "detergent burn" is quite common, is to us wholly stupid. It is an open invitation to the lawsuit hounds which can reflect on all soaps and cleansers as well as synthetic detergents. Before next winter rolls around, with its usual cold weather hand troubles, how about calling off the "detergent burn" dogs?

•

SAD SALE . . . . The buyer of a mid-west janitor supply business is suing to rescind the purchase contract and to recover his money. All on a basis of misrepresentation by the seller who maintained that part of the deal was the assignment of various secret formulas of great value. After his purchase, the buyer checked up and found that the formulas were neither deep secrets, nor were they particularly valuable. Also he allowed as how he had had no previous experience in this line of business.

In looking over the facts in this case, we can drum up very little sympathy for the buyer. Wholly inexperienced, he buys a pig in a poke, and finds he's been stuck. He then screams for the law. In the first place, he had no license to enter the janitor supply business. He knew nothing about it. Then he bought first and investigated later, showing the business acumen of a six-year old. And the fact that he fell for the "secret and valuable formula" routine indicates in our book that he had been seeing too many movie thrillers or something. But, we suppose that fools as well as sensible people have redress in the courts. Maybe that's why our civil courts the country over are all clogged up with cases.

•

CARNAUBA . . . . With prices of carnauba wax lower than they have been for many a year, we view the market with something of an "I told you so" attitude. Today, carnauba stocks are large and reports indicate a surplus of wax in Brazil. The consumption of carnauba in floor waxes has declined and, if we can read the handwriting on the wall, is likely to continue to decline.

Since the days of the Caesars, high prices for any commodity have encouraged the development of substitutes. And so it has been with carnauba. Rigged markets and high prices for the past ten or more years have given the substitutes the very opportunity which they needed. The development of synthetic and other waxes, and especially of new resins, has bitten deeply into the market for carnauba. And this applies also to products other than floor waxes.

Whereas a few years ago, there was no substitute for carnauba, today there are substitutes. Also, changes in the characteristics of our floor waxes and floor finishes have brought in new and different raw materials. The whole picture has changed and with it has come what could be a permanent drop in the demand for carnauba.

spotlight on

crystalline structure
in stearic acid

how Emersol 132 Lily improved consistency and texture of medicinal cream

If your product's performance depends on its appearance, texture, and consistency, then this actual experience should prove helpful to you: *Case History No. 13-84 . . . Attracted by lower prices, this manufacturer of medicinal creams switched from Emersol 132 to a high-quality hydrogenated solid acid. Immediately, the non-crystalline structure of the latter product reflected in an objectionable change in the texture and consistency of the cream . . . substantially reducing its performance and sales-appeal. The switch back to crystalline Emersol 132 Lily eliminated all difficulties.* Likewise, the controlled crystalline composition of Emersol 132 will give your products the same desirable creaminess, texture and consistency time after time. This, coupled with outstanding resistance to rancidity, color stability and oxidation stability will make your products more appealing to customers, easier to sell. And since Emersol 132 costs no more than competitive triple-pressed grades, all these "extras" cost you nothing. Next time . . . buy Emersol 132 Lily.

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as the reader sees it...

Consumer Reports

Editor:

In the April, 1955 issue of your publication—to which we are regular subscribers — on page 35 ("In Brief—as the Editor Sees It"), we came across a note on skin safety in the use of household synthetic detergents. Mention is made in that note of *Consumer Reports*, the March issue of which carried results of various tests carried out on detergents.

We shall be much obliged if you could either obtain for us a copy of the *Report* or, if it be too much trouble, put us in touch with the publishers thereof.

U. Shalm
Shemen Israel Oil
Industry, Ltd.
Shemen, Haifa,
Israel

Consumer Reports is published by Consumers' Union of U. S., 17 Union Square West, New York 3. Although Consumers' Union informs us copies of the March issue of their "Reports" is exhausted, we are endeavoring to obtain tear sheets or photostatic copies of the article. Ed.

★

Visiting Soapers

Editor:

I am planning and arranging a study program for a group of European executives during September and October. Their five-week visit to the United States will be under the auspices of the International Cooperation Administration of the U. S. Department of State with eight participating countries of Europe. The purpose of this visit and study is to aid these countries in finding a solution of their internal problems of marketing and distribution. In making this program I will appreciate the assistance of your organization.

There are to be about 30 executives from the chemical process industries — divided between soap and paint. In these fields they wish to study the practical use that is made of sales training programs, sales analysis, market research, advertising, etc., by the small and medium size producers.

I wish to arrange a program that will give them the opportunity to discuss these questions with trade associations, with executives of individual firms, with organizations engaged in market research and advertising, and with publishing companies covering the chemical process industries.

I would appreciate any assistance you can give me in the development of this program.

Samuel C. Stovall, project
manager,
International Trade Development Division
Department of Commerce
Washington 25, D. C.

We are offering our assistance to Mr. Stovall, and any of our readers who may wish to volunteer to help out should write to us or Mr. Stovall. Ed.

★

Caption Switch

Editor:

I note that in the June issue of Soap & Chemical Specialties you have used the first half of the paper I presented at the 41st midyear meeting of C.S.M.A. in Chicago, entitled "Fly Control on Livestock —Does It Pay?"

It appears that in some way or other you obtained a manuscript copy with uncorrected errors.

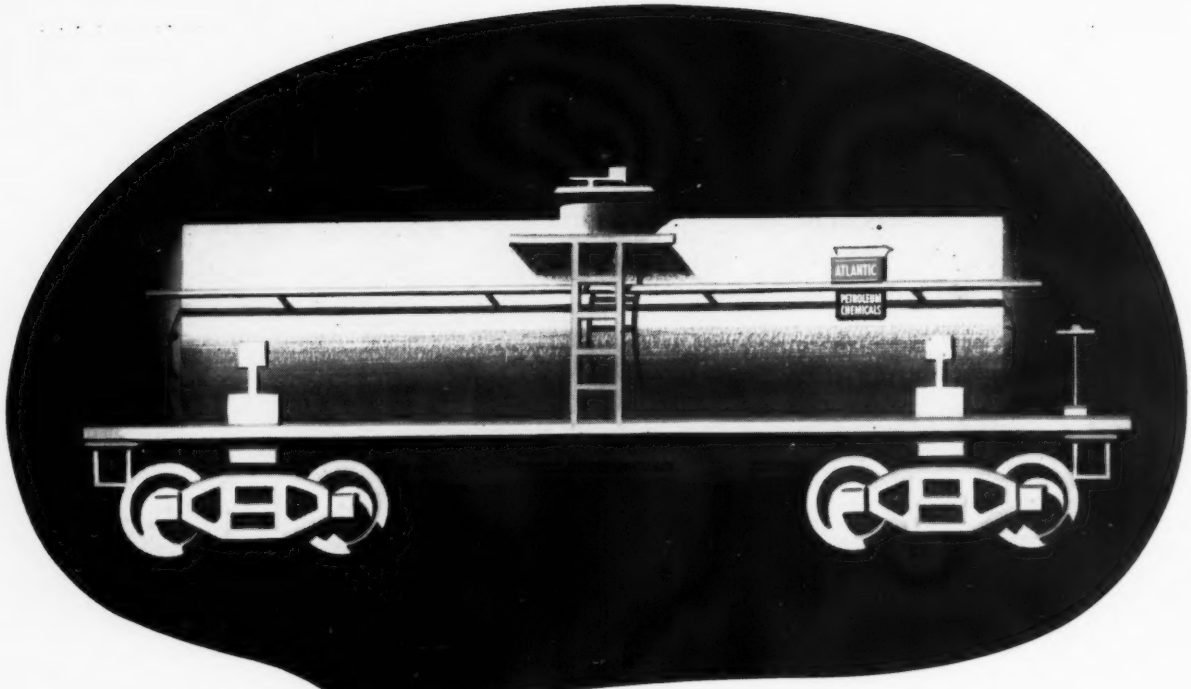
I thought I had corrected all copies available in Chicago, but apparently the one you have escaped. The errors in question involved a transposition of legends for Figures 1 and 4, and I note that you have used Figure 1 but the caption is that for Figure 4. Lest the mistakes be continued in the next month's installment, I am forwarding copies of the corrected legends for Figures 1 and 4.

George C. Decker,
Entomologist and Head,
State Natural History
Survey Division,
Urbana, Ill.

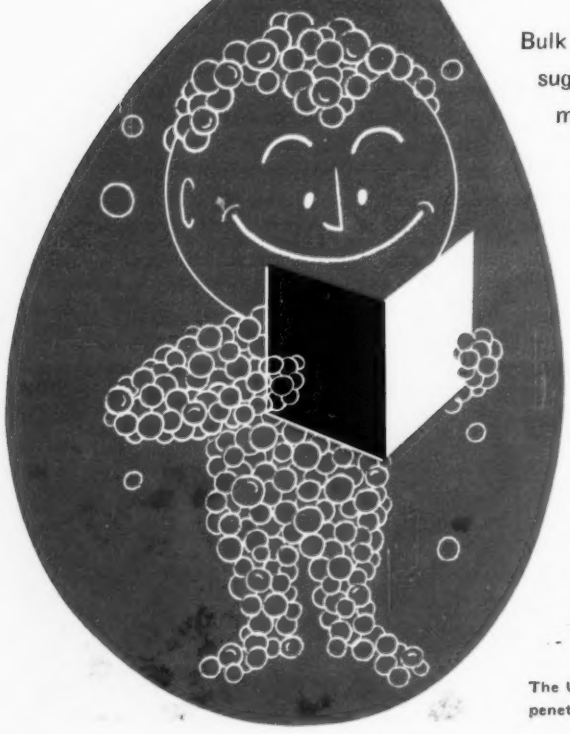
In the July issue, in accordance with Dr. Decker's letter, we attempted to straighten out the matter of the wrong captions for the figures, but only succeeded in compounding the felony. The captions for the two figures are correct in the July issue, but the figures are designated incorrectly. Thus Figure 1 is labeled "Figure 4" and Figure 4 is labeled "Figure 1." What happened is this: Dr. Decker's letter was received after the pages had been okayed for the printer. In a frantic telephone call to Baltimore we instructed the printer to switch the captions for Figures 1 and 4, which he did. However, instead of just switching the descriptive material, he also carried over the figure numbers. To Dr. Decker and our readers,

(*Turn to Page* 193)

In response to a questionnaire which was recently sent to a group of subscribers asking them to classify their businesses, we received back one card in blank but with a copy of the accompanying photo attached. On the reverse side, it tells the story that the company (1) collects and refines tallow and grease; (2) manufactures hard and soft soaps and detergents; (3) sells a complete line of industrial brushes and janitorial aids. It's the Berry Soap & Chemical Co. of Louisville, Ky. whose slogan is "Selling Cleanliness is Our Business." Good looking truck, too! —Ed.



HOW TO CUT COSTS ON DETERGENTS



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Bulk purchases call for storage facilities. Atlantic has developed suggestions to help you. They include alloys, coatings, equipment, piping layout, and estimated costs.

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The ULTRAWETS wet, penetrate, clean, emulsify

ATLANTIC
PETROLEUM
CHEMICALS

Three well-known British household detergents include "Omo", made by R. S. Hudson & Co.; "Quix" by Joseph Crosfield & Sons, Ltd., and "Surf" of Lever Brothers, Ltd. Hudson and Crosfield are part of the Lever combine. Typical British practice of boiling clothes is catered to in copy on both powdered detergent cartons.

Detergents in Britain

By Dr. A. F. Kertess*

THE estimated consumption of soaps and detergents in Great Britain in 1953 was 520,000 tons, compared with 500,000 tons in 1952. Out of the total for 1953 about 172,000 tons (or 30 percent) were synthetic detergents and more than 132,000 tons (or 76.7 percent) of such detergents were alkyl aryl sulphonates; 17.4 percent were alkyl sulphates and about six percent were non-ionics. About 90 percent of the total consumption of synthetic detergents is used in the manufacture and marketing of domestic and household detergents.

In the household detergent products field the more important brands are: "Daz," "Tide" and "Dreft" of Thomas Hedley & Co., a firm controlled by Procter & Gamble in USA; "Omo" and "Surf" of Unilever, and "Fab," manufactured by Colgate-Palmolive Co. Most of the products mentioned contain 20-30 percent alkyl aryl sulphonates with small additions of lauryl sulphates as in the case of "Dreft." Details of the composition of the various domestic detergents are given by Dr. Stuepel in his recent book on *Synthetische Wasch- und Reinigungsmittel.*"

Other domestic detergents in Britain are: "Shel" of the Co-operative Wholesale Society, "Brobat" and "Dispa" and a number of other household detergents which are sold locally in the various regions and districts. All the beforementioned products are of the anionic type. "Stergene" is similar to "Lissapol X" of Imperial Chemical Industries.

Thomas Hedley, the makers of "Daz," "Tide" and "Dreft," have at present a 75 percent share of the syntetic detergent market. There is intense competition between Thomas Hedley and Unilever, both firms are using every form of advertising and are spending heavily on newspaper, film and poster advertising. "Fab" of Colgate is the runner-up in the field. It is estimated that the share of domestic synthetics in the washing agent market has now reached about 50 percent, but soap and soap products, such as "Persil," "Oxydol," "Lux" and similar products are still used in large quantities for domestic purposes.

In the toiletries and shampoo field approximately 90 percent of the products are based on primary fatty alcohol sulphates. This was recently stated by Mr. Schoen, the chairman of Marchon Products, Ltd.,

*Paper presented before the First World Congress on Detergency, Paris, France, September, 1954.

Other detergents and washing aids featured in the British market are "Spel" of Co-operative Wholesale Society, Ltd., Irlam Soap Works, Manchester; "Fab" of Colgate-Palmolive, Ltd., and "Brobat" bleaching fluid of Brobat Manufacturing Co., both London.

when opening their new plant for the production of higher fatty alcohols. Marchon expects to manufacture lauryl alcohol for its own use and for the British and foreign market and hopes to be able to produce 4,000 tons per annum. He expects that the proportion of alkyl aryl sulphonates used will, or may change in favor of fatty alcohol sulphonates. This is, apart from technical points, a question of price.

Besides alkyl aryl sulphonates, which are extensively used for the manufacture of domestic detergents, we have in Britain the by-product from "cracking" of petroleum. It is estimated that about 30,000 tons per annum of such products are available now to makers of industrial and other detergents, representing about 150,000 tons of marketable products. Such products include: "Teepol," "Lensex," "Comprox," etc. During the last war when fatty materials were scarce, they were also used in the domestic and cosmetic field. These secondary alkyl sulphates are now extensively used for industrial purposes, particularly as wetting and washing agents in the textile industry. Although exact figures are not available, it can be assumed that the petroleum by-products represent about 60-70 percent, if not more, of auxiliary products used in the textile industry. Apart from: "Teepol," "Comprox" and "Lensex," there are a number of products on the market which are composed of secondary alkyl sulphates. The balance of about 30 to 40 percent is shared by the primary alkyl sulphates, such as "Gardinol," "Estralene," "Pentrone," "Lissapol C" and many similar products. In addition there are non-ionic products like "Lissapol N," "Ethylan," "Estrol," "Nervan-Aid," etc. Also included are sulphonated oils, cationic products and a large number of wetting, dispersing, levelling, scouring, dyeing and finishing agents.

Textile Use Large

THE textile industry is the main user of such products and their consumption is rising steadily, as is the number of products, and firms manufacturing them. We have in Britain about 25 to 30 sulphonators and manufacturers of such products, apart from a number of small manufacturing firms who are mostly compounders and mixers. The 25 to 30 main manufacturers employ many hundred research chemists and it is recognized that British science and research have largely contributed to our present knowledge of surface active agents and synthetic detergents. It is also known that as far back as 1875 the chemist von Crum in Glasgow was the first to make sulphonated castor oil, which has been known ever since as "Turkey Red Oil." This and similar products are still used today in the textile industry in Great Britain and elsewhere. The discovery of sulphonated castor oil led to

Procter & Gamble Co. entries in the British soap derby are these products of Thomas Hedley & Company: "Daz", "Dreft" and "Tide".

the highly sulphonated oils, sulphated fatty alcohols, fatty acid condensates, alkyl sulphates, secondary alkyl sulphonates, alkyl/aryl sulphonates, the cationic and non-ionic products. How many 10,000 tons of such products are manufactured and used is very difficult to say, as no reliable statistics are available. The textile industry is still using soap and will continue to do so for many years to come.

Apart from products for washing and scouring purposes, there are great numbers of "tailor-made" products for special purposes on the market. The newer type of man-made fibres, like "Nylon," etc., require special preparatory dyeing and finishing treatment where some of the surface active agents become very useful.

Apart from their use as washing agents, such products are also applied for yarn lubricants, as assistants in rayon production, as anti-static agents, as wool-oil emulsifiers and as dispersing, wetting and sizing agents. After having spent 30 years in the technical sales promotion of such products, I can say that the textile industry in Great Britain has readily acclaimed the advantage offered by the use of surface active compounds, and if one analyses the sales of such products, one could say that out of the total sales to the textile industry: 55 percent are used by the woolen industry, 20 percent by the rayon industry, 15 percent by cotton processors, and the remaining 15 percent by linen and other fibres.

Laundries Use Syndets

SURFACE active agents and synthetic detergents are also used in laundries, although still on a limited scale. Secondary sulphated alcohols are widely used for industrial purposes, for cleaning buildings and also in the shipping industry; they have found large use in the metal industry as rust preventives, in the leather industry, in metal plating, also for wax compounding, in the plastic industry, and for pharmaceutical and medicinal purposes.

In the manufacture of toilet preparations, fatty alcohol sulphates, alkyl/aryls and other compounds are used in the compounding of hair preparations, in dentifrices, shampoo creams and liquid shampoos, also in hand lotions and creams.

In conclusion, it should be pointed out that our scientists and research workers and also our technicians and practical men have largely contributed to the swift and universal acceptance of synthetic detergents and surface active agents in our industry and in our homes.

Food Industry's Yearly Cleaning Bill

THE food industry spends in the neighborhood of 42 to 45 million dollars a year for cleaning chemicals, C. F. Weinreich, research director of Cherry-Burrell Corp., manufacturers of dairy plant equipment, declared in a Chicago address recently. Approximately one-third of this total, he added, not counting grocery store purchases, is used by the dairy industry, including both farmers and processors.

Thirty years ago, Mr. Weinreich continued, cleaning chemicals consisted largely of TSP, caustic soda, soda ash, with a few chlorine products. Today the list includes a score of products and many former minor cleaning and sanitizing agents are fast passing into the group that merits major consideration.

"Fortunately," he declared, "the food industry today is evaluating the sanitizing chemicals, not by how much per pound or per barrel, but by what the product will do and what the labor saving or other saving will be. This trend appears well grounded and permanent in the industry."

Mr. Weinreich spoke at a joint meeting of the Commercial Chemical Development Association and the Chemical Market Research Association, members of which are engaged in the commercial introduction of new chemicals and the development of new uses for old chemicals.

Changing food habits, such as the practice of purchasing milk at the super mart, and the use of frozen foods, Mr. Weinreich asserted, are constantly challenging food sanitarians, particularly in respect to the need for increasing shelf life of food packages in the stores.

One of the major tasks of chemical supply companies, he pointed out, is the conditioning of potable water, used with cleaning agents or chemicals for surface cleaning of food processing equipment. He discussed the various compounds in use by the dairy industry for removal of milk stone, protein and water deposits on equipment and told of studies indicating that the further addition of hypochlorites to the compounds in common use improves their film-removing effectiveness.

"Mixtures of cleaning compounds," he said, "have usually increased their effectiveness over straight chemicals in cleaning. With the more recent introduction of a host of new chemical cleaning agents undoubtedly more discoveries will be made of more effective combinations. Some will be stumbled on and others by systematic studies."

Dr. H. R. Kraybill of the University of Chicago department of biochemistry reported that the American Meat Institute of Chicago has recently issued a pamphlet describing types of detergents and cleaning compounds commonly used by the meat processing industry. Quoting from the publication, he listed five groups of products: (1) general alkaline cleaners; (2) general heavy duty alkaline cleaners; (3) general inorganic acid cleaners; (4) heavy duty inorganic acid

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MEDICATED SOAPS

THE use of soap will soon be confined to toilet soap, novelty soap, and medicinal soap, with detergents firmly installed in all other fields. We believe that the demand for medicinal soap can be increased. False claims by ignorant or unscrupulous manufacturers have discredited soap as a therapeutic agent. But our modern knowledge of the importance of trace elements and recent discoveries of drugs compatible with soap should enable the medicinal soap manufacturer not only to recover lost ground but should open new horizons in this field.

Soap as a vehicle for therapeutic agents was first used by F. Hebra, professor at the University of Vienna, in the second half of the last century. He employed soft soaps to facilitate resorption of drugs. Actual manufacture of medicated soaps was started in Germany as a result of publications by Unna and Eichhoff.[1] Therapeutic ingredients used in soap at that time included tar (five percent), thymol (eight percent), borax (five percent), menthol (five percent), sulfur (10 percent), and hydroxylamine (three percent). Eichhoff introduced medicated soaps in powder form, thus facilitating correct dosage and economy.

Three different methods of application for medicinal soaps were suggested by Schrauth[2]: either simply wash, rinse and dry; or produce lather, permit to dry, remove with clean towel; or produce lather, permit to dry and leave for 12 to 24 hours. Intensity of treatment is varied by adjusting water temperature.

The following pharmacological properties have been claimed for soap by Siebert[3]: fat extracting, keratolytic, parasiticidal, disinfectant and germicidal. All of these

properties can be reinforced by therapeutic additives which may be incorporated by various methods: The drug may be milled into a neutral stock soap; it may be mixed with a powdered stock soap; it may be incorporated in a cold processed soap, or it may be added to a soft soap.

Following are formulae and methods for the manufacture of some of the most important medicated soaps:

Manufacture of Soap Bases

Soap stock (according to German Pharmacopeia)—Heat 120 parts of soda lye, sp. gr. 1.170, on a water bath. When a temperature of 80°C. is reached, a hot mixture of 50 parts of lard and 50 parts of olive oil is gradually added with constant stirring. The mixture is heated and gently stirred on a water bath for one-half to one hour, during which time saponification proceeds, but will not be completed. Next, 12 parts of alcohol are added and heating continued with constant stirring until the mass has acquired uniform consistency throughout and no unsaponified fat can be perceived. On the average, one to two hours

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are necessary. As soon as the mass has acquired the uniform appearance described, 200 parts of hot distilled water are poured into it. A tough transparent paste soap should now form which goes into clear solution in hot water and does not show any separation of fatty particles. Turbidity of the paste soap may be caused by: 1) lack of water; 2) presence of unsaponified fat; 3) excess alkali. In the first and second cases the addition of a sufficient quantity of distilled water will clarify the mass. In the third case, the soap must be reheated and some weak soda lye added.

When the soap paste shows the desired consistency, a filtered solution of 25 parts of common salt and five parts of sodium-carbonate crystals in 80 parts of water is added. Addition of sodium carbonate serves to precipitate any magnesium present in the salt in chloride form, thus preventing formation of insoluble magnesium soap. After a brief period of stirring, the soap will rise to the surface. The mass is then reheated without stirring and finally allowed to cool. After cooling the soap floats as a solid cake on the surface of the lye. It is then removed, rinsed several times in distilled water and finally pressed hard between linen cloth. This soap, in cake or powder form, is a white, slightly hygroscopic substance, almost odorless or with only a faint soapy smell, completely soluble in alcohol and giving a clear solution in water. It has a slightly alkaline reaction and consists of approximately 91 percent fatty acid, seven percent soda lye and two percent water. Dissolved in alcohol, the addition of phenolphthalein solution should produce only a faint pink color.

This medicinal stock soap (*Sapo Medicus*) is used internally (in pill-form) to promote stomachic secretion, as well as externally for cleansing and softening the skin. It is also used for clysters and as a base for suppositories.

Unna[4] prepared a *superfatted stock soap* as follows:

Beef tallow	16 parts
Olive oil	2 parts
Soda lye 38°B	6 parts
Potash lye 38°B	3 parts

This soap should be used as an ordinary cleansing soap in all kinds of inflammatory skin diseases where ordinary soap is inadvisable, (eczema, erythema, sudamine) for dry skins that show a low fat-content, and as a working soap for healthy people who have to wash forty or more times during the day. This stock soap serves also as a vehicle for therapeutic agents.

Cold processed soap — 1000 grams of fats or oils (coconut oil and/or lard and/or castor oil) are melted and cooled to 25°C. Next 450 grams of sodium hydroxide and 50 grams of sodium carbonate are added with constant stirring. At this point 100 grams of water and 100 grams of glycerine are added in which the drugs have been previously dissolved. Mix thoroughly. The mixture is then immediately poured into wooden molds, lined with tinfoil or into metal boxes, so-called "cooling frames." The mixture generates heat and is consequently saponified. The soap is allowed to stand in the frames for several days. It can then be removed and cut or stamped to any size desired.

Soft soap—43 grams of linseed oil and 58 grams of potassium hydroxide are heated in a steam-jacket or hot-water-jacketed kettle. Add five grams of alcohol, continue heating and stir until complete saponification results. The finished product should be clear and water-soluble. Add q.s. water to 100. Any drugs to be added should first be dissolved in the water.

Each of the three soap bases described above may serve as a vehicle for medicinal additives.

Medicated Soap Formulae

Albumen soap — Albumen combines with alkali to form non-caustic alkali-albuminate. Any detrimental effect which excess alkali might have upon the skin is therefore counteracted by the presence of albumen in soap. Deite[5] gives the following formula: 500 grams of coconut oil are mixed at a temperature of 35° to 40°C. with a solution of 100 grams of sodium hydroxide in 330 grams of water; then 200 grams of albumen treated with six grams of 40 percent formaline are immediately added. Saponification then proceeds in the normal way under constant stirring as in cold processed soaps. When the first stage of saponification has taken place, the soap paste is poured into a frame and covered with a cloth to allow the process to complete. The soap is then ready to be cut without further treatment, and can be stamped and packed for shipment.

Because of the neutralizing effect of the albumen on the alkali in the soap, no irritation of the skin should be caused and the skin should remain soft and smooth.

Silicone acid soap—According to Dr. Irving Lubow, of New York University Bellevue Medical Center,[6] the irritating effects of soaps and detergents appear to be controlled by a 15 percent silicone-acid buffered cream, which is milled into a stock soap.

Oxygen releasing soap — Unna[7] introduced an oxygen releasing soap under the name of "Pernatol."

stock soap	65 parts
mineral oil	30 parts
sodium peroxide	3 parts
boric acid	2 parts

The procedure consists of mixing all the ingredients in a soap mill. The result will be a soft soap (ointment consistency).

Another oxygen releasing soap can be made by melting 880 grams of stock soap in a steam kettle under constant stirring together with 2004 grams of a 50 percent zinc peroxide solution. This, too, is a soft soap and will not irritate the skin. Due to its zinc content it has disinfectant qualities.

Another oxygen releasing soap can be made with sodium perborate, sodium percarbonate, sodium persulphate or magnesium perborate, all of which release different percentages of active oxygen. The release of oxygen makes these soaps highly effective as disinfectants and bleaches.

Germicidal or "deodorant" soap—The addition of germicidal agents was at first used only for surgical purposes or for treatment of skin diseases. One of the first of these germicidal soaps was *mercury soap*. According to W. Schrauth and W. Schoeller[8] one to five percent of an organic mercury compound is milled into a neutral stock soap. The following mercury compounds can be used for this purpose: four percent sodium salt of oxymercury-O-toluyl acid; two percent of sodium salt of phenol-disulfonic acid; (used under the trade name "Afridol").

In recent years it has been established that germicidal soaps destroy all or most of the skin bacteria which cause decomposition of perspiration and consequently body odor. By destroying these bacteria the germicidal soaps have a deodorant effect. This application became feasible only after discovery of non-toxic germicidal agents. One of the first of these soaps according to T. J. Udinsky[9] consists of two percent of dihydroxyhexachloro diphenylmethane. E. P. Traub[10] states that an individual using this soap regularly has a lower resident bacterial count than a person who washes 20 minutes with ordinary soap. Baer and Rosenthal[11] use one percent of tetra-methyl-thiuram-disulfide. One week's use of this soap resulted in a very substantial reduction in the transient and resident bacterial population of the hands.

Recently deodorant soaps have become big business with annual sales totalling two to two and a half million dollars. Besides the chemicals already mentioned above many others are incorparted in deodorant soaps, such as parachloromethylxylenol and "bithionol."

Tar soaps—Heat 500 grams of pine tar in a kettle until liquid. Add 370 grams of sodium hydroxide of 38°B. Continue heating for some time until the mass becomes syrupy. Next 500 grams of coconut oil are stirred in and the mass is ready to be poured into molds where the process of saponification is completed, as in cold processed soaps.

Tar soaps and soaps containing tar-sulfur or tar-sulfur and carbolic acid compounds are frequently used in the treatment of ezcema, psoriasis and dandruff.

Sulfur soap—Mill 100 grams sulfur into 900 grams stock soap. Sulfur soap and sulfur-sand-soap (a sulfur soap with a 20 percent addition of fine sand) are used for skin-peeling purposes in cases of acne.

Superfatted soap—According to Sulzberger and Pascher[12] a superfatted soap is made with stock soap into which aquaphor (cholesterinized petrolatum) is milled. This soap is used in cases of excessive dryness of the skin, senile skin, etc.

Naphthalene soap—20 grams of naphthalene and 10 grams of lanolin anhydride are milled into 250 grams of stock soap. The resulting soap has deodorizing effect but is not germicidal.

The formulae and procedures mentioned are only those of some of the best-known medicinal soaps. There are a great many others, such as salicylic acid soaps, borax soaps, menthol soaps (against insect bite and itching of the skin), etc. Most of these medicinal soaps can be made by milling the drugs into a superfatted stock soap.

When composing formulae for medicinal soaps careful attention has to be given to the choice of soap stable additives. Medicinal soaps can be perfumed if found desirable but only those aromatic chemicals or essentials oil can be used which will not cause deterioration of the product and are non-irritant to the skin.

This article is intended to give ideas to those soap-chemists who are interested in the still largely unexplored field of medicated soaps.

The recent discovery of many new drugs as well as aromatic chemicals has opened a wide field of research for the biochemist, medical investigator and soap chemist.

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Techniques for Evaluating

Low-Foaming Detergents

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Part I

BEFORE the advent of the syndets, soap was the major organic component in detergents, and its activity could generally be related to the amount of foam it produced. Consequently the term "suds" became synonymous with detergency. More recently, however, it has become apparent that suds are not always desirable in detergency operations. In mechanical washers, such as industrial or home dishwashers, bottle washers, or other devices involving high spray pressures or extreme conditions of agitation, suds cushion the sprays and reduce their efficiency. In extreme cases suds can stall the rotating spray heads of machines so equipped or produce costly and irritating floods and overflow.

The development of syndets has shown that detersive efficiency is not dependent upon suds formation; nevertheless, most syndets still produce more foam than can be tolerated in certain applications. Consequently, it has been necessary to formulate dishwashing or bottle washing detergents based solely upon inorganic components with little, if any, surfactant present. However, in view of the superior wetting, cleansing and rinsing properties which syndets impart to such detergent formulations, it became imperative that efficient low-foaming materials be developed.

This paper will describe techniques which have been used in the development of new low-foaming surfactants, and low-foaming detergent formulations, for use in applications where foam is undesirable. These techniques include: a novel laboratory apparatus which simulates the action of a mechanical dishwasher and permits evaluation of foam under controlled conditions of temperature and spray pressure; adaptation of a standard home dishwashing machine as a test instrument; evaluation of detersive efficiency by means of a dynamic hard surface detergency test.

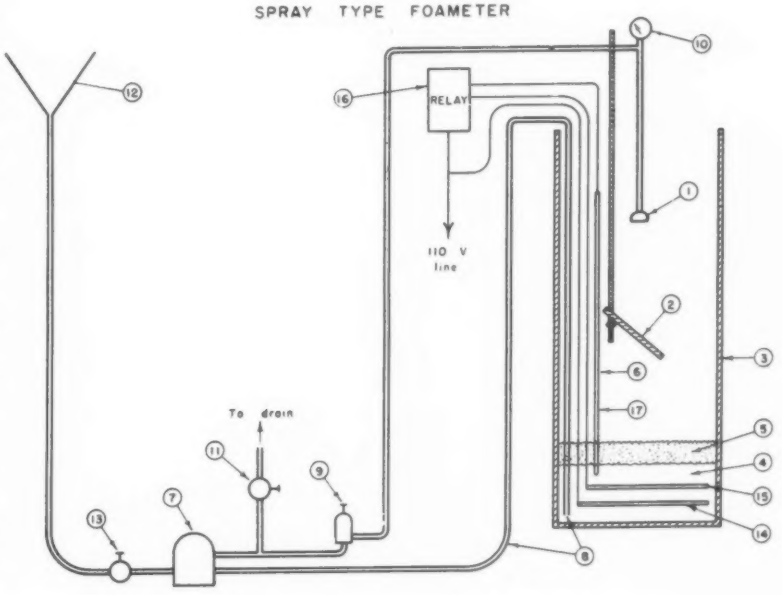
The Foameter

FIGURE 1 is a diagrammatic sketch of a laboratory apparatus which we have dubbed "The Foameter." A spray of hot detergent solution emerging from a nozzle (1) hits a 3″ x 3″ stainless steel baffle (2) and then falls to the bottom of the 9″ diameter x 18″ high glass jar (3). This jar also acts as reservoir for excess solution (4) so that foam (5), generated by the impact of the spray on the baffle, floats on this solution and can be measured by means of an all-glass ruler (6). A circulating pump (7) draws solution from the bottom of the jar through a lagged copper tube (8) and supplies it to the spray nozzle via a diaphragm type pressure reducer (9) and a Bourdon pressure gauge (10).

Initially, about two liters of water is added to the jar via the funnel (12) and the valve (13) thus

Figure 1

SPRAY TYPE FOAMETER



*Presented at 41st mid-year meeting of Chemical Specialties Manufacturers Association, May 17, 1955, Chicago.

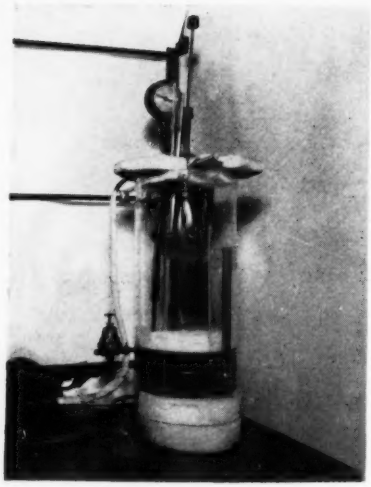


Figure 2

simultaneously priming the pump. Detergent solution is run down the jar walls via pipet to prevent foam formation, then additional water is added, as before, to a total solution volume of three liters. Drainage is through valve (11) and temperature is controlled by immersion heaters (14, 15) and a thermo-regulator (17). Figure 2 shows the Foameter in operation.

The effect of variables such as concentration of solution, spray pressure and time of test have been considered in another publication (1) and are demonstrated in Figure 3. Increasing any of these factors tends to increase foam. For the work reported here we have standardized on: 0.25 percent concentration for detergent powders, 0.025 percent for surfactants; a pressure sufficient to maintain a flow rate of about 700 ml. per minute through the nozzle; a test time of 30 minutes. Under these conditions the foams obtained for several commercial and experimental detergent powders at 70°C. are described in Table I.

Of the five commercial products, only sample A contained an appreciable amount of surfactant and was shown to foam excessively in a commercial cafeteria dishwashing machine. The other four were predominantly inorganic in composition, and were satisfactory under field conditions. Addition of 10 percent of a moderately low-foaming surfactant, "Triton X-114"*, to the alkaline Formulation G produced excessive foam also. Formulation G contained sodium tripolyphosphate, sodium metasilicate and soda ash diluent in ratio 2/3/1.

Table I. Foams of Several Detergent Powders

Sample	Foam Heights
Commercial Product A	6.9 cm.
Commercial Product B	1.4
Commercial Product C	1.8
Commercial Product I	1.6
Commercial Product J	1.6
Inorganic Formulation G	1.4
Formulation G + 10% Triton X-114	6.4
Formulation K + 10% Triton X-114	1.6

Further examination revealed that the amount of foam was not determined by the surfactant alone. Certain inorganic salts, such as sodium hexametaphosphate or sodium metasilicate, contributed to rather high foam when blended with a surfactant such as "Triton X-114", whereas others, such as sodium tripolyphosphate or sodium silicate, produced much less foam.

These observations, reported in detail elsewhere (1), resulted in development of Inorganic Formulation K which did not produce excessive foam when blended with "Triton X-114." Formulation K consisted of: 60 percent sodium tripolyphosphate, for detergency and sequestering action; 20 percent sodium silicate, for corrosion control; and 20 percent sodium sulfate as diluent.

Despite selection of optimum inorganic components, "Triton X-114" still produced excessive foam under certain field conditions so that development of surfactants with lower foam was necessary. To this end a wide variety of experimental materials were evaluated in the Foameter. Table II describes the behavior of some of these when added at 10 percent level to Formu-

*—"Triton" surface active agents are products of the Rohm & Haas Co., Philadelphia.

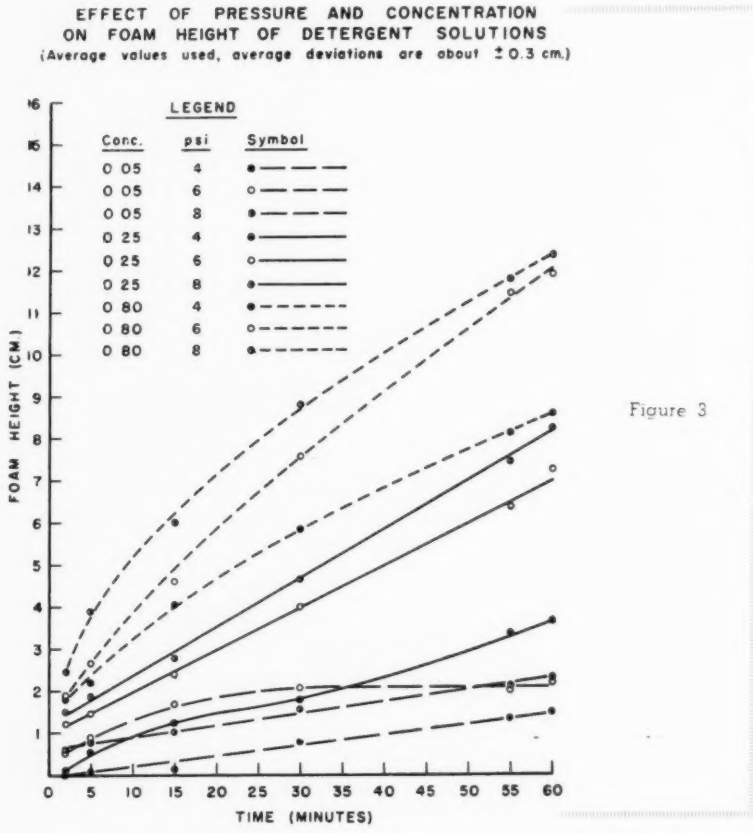


Figure 3

Table II. Comparison of Foameter Data of Surfactants in Built and Unbuilt Formulations

	Foam heights in Cm.					
	10% in Base K			Surfactant alone		
	70°	60°	50°C.	70°	60°	50°C.
Experimental Surfactant #1	0.4	0.5	0.5	0.1	0.2	0.4
Experimental Surfactant #2	0.6	0.9	1.2	0.9	1.5	5.7
Experimental Surfactant #3	0.8	1.0	1.8	1.3	4.8	9.9
Experimental Surfactant #4	0.1	0.2	0.6	0.7	1.0	1.0

lation K, and when tested in absence of inorganic salts.

Surfactants Nos. 1 and 4 were acceptable in both built and unbuilt forms at the three temperatures, and proved to be acceptable when field tested. Surfactants Nos. 2 and 3, however, although apparently acceptable when tested in built form, proved to be unacceptable under field conditions. Their excessive foams, when tested unbuilt at the lower temperatures, must account for their failure in practice. Apparently, evaluation of foam of a surfactant in absence of inorganic salts, and over a range of temperatures, provides a more sensitive indication of differences observable in the field, than evaluation of foam of the built formulation.

Table III describes foam behavior of a number of low-foaming commercial and experimental surfactants, in absence of salts, at the three test temperatures. Most of the surfactants produced higher foams at the lower temperatures, a phenomenon generally characteristic of nonionic surfactants. Some were so low in foam that they might be considered non-foamers for all practical purposes.

The Dishwasher

ALTHOUGH the Foameter permitted fairly rapid screening of hundreds of experimental surface active agents, it was still necessary to evaluate all promising materials in field tests. Such tests were undertaken by incorporating experimental surfactants into an inorganic formulation (K) and providing samples to housewives who evaluated them in their home dishwashers, and compared them with commercial products submitted under code. The samples were also submitted to our plant cafeteria for evaluation in their Blakeslee dishwashing machine.*

The correlation of foaming behavior in practice with that observed in the Foameter was excellent. Of 20 samples examined, there was no case where a material with acceptable foam in the laboratory (less than 1.0 cm. at 50°C.) produced unacceptable foam in either cafeteria or home trials. Several materials with marginal foams (1.0 to 1.9 cm.) in the laboratory were acceptable in the field and others were unacceptable. In these cases foam behavior could be related to the type of home dishwasher used, it being apparent that certain machines were more sensitive to foam than others. In order to eliminate the necessity for additional extensive field trials, and to put laboratory evaluations on a more definitive basis, one of these machines, a "Kitchen-Aid" automatic home dishwasher (Model KD-20)*, was installed in the laboratory. This machine employs high spray pressures for maximum detersive efficiency; consequently, it is relatively sensitive to foam.

In operation, the "Kitchen-Aid" machine recirculates detergent solution through the spray nozzles of a large rotor which spins freely, much like a lawn sprinkler, its rotation rate being determined by the force of the sprays. Speed of rotation can be reduced by foam and, in cases of excessive foam, the rotor can be stalled completely. Therefore, speed of rotation can be used as a measure of foam under very realistic application conditions. The dishwasher door was replaced by a transparent "Plexiglas"** demonstration panel so that the rotation of the spray arm could be observed and clocked.

In order to simulate use conditions, the machine was loaded with 16 clean dinner plates and cups, although it could be shown that the effect of the dishes on foam, or rotor rpm, was negligible. A 20 gm. sample of detergent powder, representing a use concentration of about 0.23 percent, was charged and the rotor rpm clocked for ½ minute during the five minute wash cycle after 1.5, three and four minutes.

*—"Blakeslee, Model PC-3-PW, Double Tank, Manufactured by Blakeslee Kitchen Equipment Co., Chicago.

*—Manufactured by Home Dishwashing Div. of Hobart Mfg. Co., Troy, Ohio.

**—Product of Rohm & Haas Co., Philadelphia

Table III. Foams of Several Commercial and Experimental Surfactants

Surfactant	Foam heights in Cm.		
	70°	60°	50°C.
Experimental Surfactant #5	0.0	0.0	0.1
Experimental Surfactant #6	0.0	0.1	0.2
Experimental Surfactant #7	0.4	0.9	1.1
Experimental Surfactant #8	0.2	0.9	1.5
Experimental Surfactant #9	1.7	2.4	2.5
Experimental Surfactant #2	1.1	2.4	5.2
Experimental Detergent CF-10	0.0	0.0	0.1
Triton 9X-123	0.7	0.9	2.5
Triton X-45			1.0
Triton X-114			7.4
Commercial Surfactant A	2.0	2.4	3.2
Commercial Surfactant B	0.2	0.3	0.6
Commercial Surfactant C			0.8

Table IV. Rotations per Minute of Rotor Arm of Dishwasher During Wash Cycle

Inorganic Formulation	Surfactant (10%)	130-140°F.	105-115°F.
Water	—	96	96
Commercial Product A	—	0	0
Commercial Product B	—	66	64
Commercial Product C	—	40	0
Formulation K	—	80	
Formulation K	Exp. Surfactant #1	84	74
Formulation K	Exp. Surfactant #7	76	52
Formulation K	Comm. Surfactant A	0	
Formulation K	Comm. Surfactant B	98	
Formulation K	Triton 9X-123	94	
Formulation K	Triton X-45	82	
Formulation K	Exp. Detergent CF-10	96	94
Formulation M	—	96	
Formulation M	Exp. Detergent CF-10	96	94

The lowest rpm was recorded. Temperature was regulated by means of a "Fulton-Sylphon"*** steam/water mixer, but was not as precise as desired; hence the use of a temperature range in reporting data.

Rotor rpm data for a number of commercial and experimental detergent formulations are recorded in Table IV. Of the three commercial products, Sample A, which is presumed to contain a low-foaming surfactant, stalled the rotor. Samples B and C were predominantly inorganic but they did produce foam; differences in their foams were more distinguishable by this test than by the Foameter.

Figure 4 demonstrates the excellent spray action of the Kitchen-Aid rotor when a non-foaming material, such as Experimental Detergent CF-10, is used. The sprays reach every section of the machine so that effective cleaning is possible. On the other hand Figure 5 demonstrates the ineffectiveness of the sprays when the rotor has been stalled by excessive foam.

The behavior of the surfactants when added to the Inorganic Formulations K and M is also reported and is shown to correlate rather well with their performance in the Foameter as described in earlier tables. Several surfactants seemed to have some defoaming action since they produced higher rotor rpm values when blended with Formulation K than did Formulation K itself.

Most of these materials produced somewhat more foam at the lower of the two test temperatures, again correlating rather well with their behavior in the Foameter.

These observations confirmed the utility of the dishwasher for testing powdered formulations and also suggested that it could be adapted for use in screening experimental low-foaming surfactants in the absence of inorganic salts. Under such circumstanes, total use concentration of surfactant was adjusted to 0.025 percent to simulate use conditions. Many surfactants have been tested in this way and the rotor rpm data have been quite reliable. Table V describes reproducibility of the data for two materials with widely differing foaming characteristics. In addition, a fairly satisfactory correlation has been obtained between Foameter and dishwasher for foams of unbuilt surfactants, and this is demonstrated in Figure 6.

Because of its speed, ease of operation, and realistic test conditions, the dishwasher is probably preferable to the Foameter as a laboratory test instrument. Moreover it possesses extreme flexibility and such factors as temperature, soil load, water hardness, etc., can be varied as desired.

Temperature has already been described as a major factor in determining the foam of low-foaming nonionic surfactants. The foams of two such surfactants have been compared in the dishwasher over a

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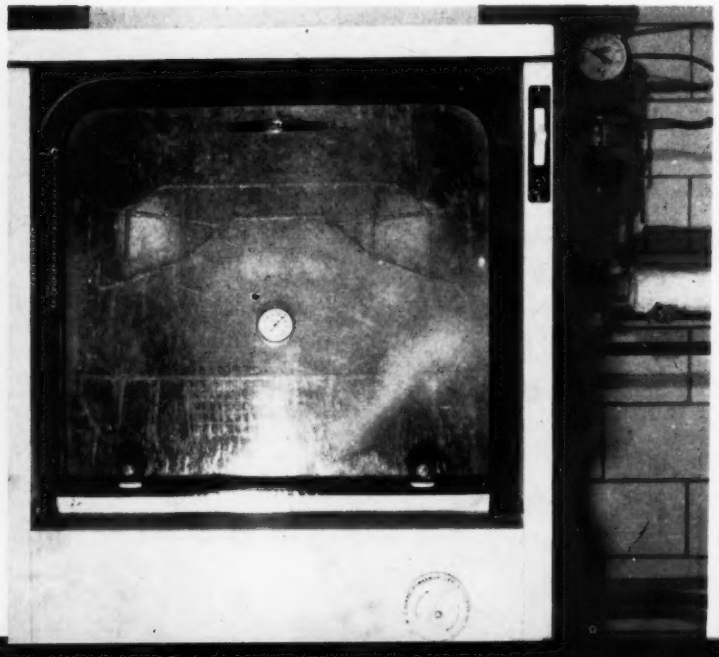
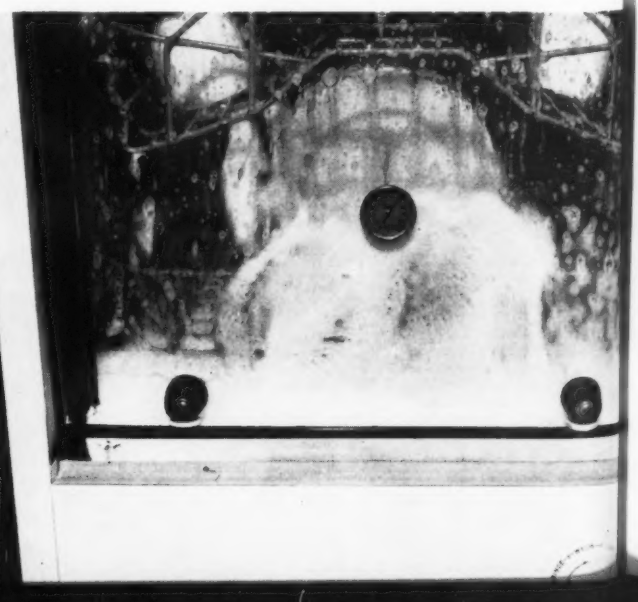
***—Manufactured by Fulton-Sylphon, Knoxville, Tenn.

Figure 4, left; Figure 5, below





WASHINGTON
Point-of-View

By George L. Prichard

Bureau of Raw Materials for
American Vegetable Oils and Fats Industries

THE U. S. Department of Agriculture, after much backing and filling finally determined and announced earlier this spring oilseed price supports for the 1955 crops. As predicted, these supports were reduced from 1954 parity support levels. And, the cottonseed package program will not be used as the method of price support for 1955-crop cottonseed.

It has since been aptly pointed out by others that the Department of Agriculture has used the cottonseed products package program as the whipping boy for all of the attendant evils of its policy of supporting large United States surplus oils and fats production at levels above world market prices. In lieu of the package program, Department representatives proposed a purchase and resale program through cottonseed oil mills which involved all of the bad features of the so-called Brannan plan with none of its good features. Cottonoil mills, speaking through the National Cottonseed Products Association, again recommended that the price support activities be carried out by some means other than a program through the mills.

The Department accepted this recommendation and the cottonseed program as announced on June 2 will be a farm loan (never effective) and a seed purchase program from farmers and cotton gins. This approach has appeared generally satisfactory except to the cooperative cottonoil mills and to the crushers of soybeans. The coops still contend for some type of a products purchase program which would be helpful to them in arranging their financing. Soybean crushers fear the unknown manner in which CCC might handle cottonseed acquired under the purchase plan. They have suggested to the Department that the announced supports be implemented by an offer to buy crude cottonoil and soybean at some fixed price.

In its June 2 announcement USDA indicated in effect that it did not expect any problems because open market prices should be over the support price. Evidently this opinion was formulated without too much regard to the official statistics which, as this is written in early July, indicate total U. S. edible supplies for the crop year beginning Oct. 1, 1955 of about 10.7 billion pounds, as compared with approximately 11 billion pounds for the current crop year. This estimate for 1955-56 assumes a soybean crop of 375 million bushels. With good weather conditions the total supply could equal the 11 billion pounds for the current crop year.

Except for support price impounding and, of course, for CCC butter stocks the 1955-56 supply will be a free market supply in contrast to this year when supplies on Oct. 1, 1954 included some 600-plus million pounds of cottonoil held by CCC. For practical purposes this inventory has now been liquidated.

Since the enactment of Public Law 480 providing for the sale of farm surpluses for foreign currencies, the Department of Agriculture has followed a policy of declaring eligible for export thereunder only those commodities which CCC has in its inventory. With the liquidation of the CCC cottonoil stocks and the supply situation mentioned above the Department announced July 1 that edible oils and fats (lard, soybean and cottonoil) would be eligible for export under the provisions of PL 480. This action has been taken in time and if allocations are made promptly and for large enough quantities it could have the effect of moving the U.S. surplus through normal trade channels without any material portion being impounded under the price support program. There has evidently been no thought of including tallow and grease because there are no direct, or even reasonably indirect price support activities affecting this commodity.

Officials of CCC have been exploring the possibility of making credits available to foreign areas to buy items in CCC inventory. As this is written, discussions involve some means of accepting notes from the banks in foreign countries which CCC would rediscount with U. S. banks. The proceeds would be used for the purchase of items from CCC stocks. This seems to be directed primarily to cotton and grains which loom largest in the government holdings. However, should CCC embark upon a program of buying

soyoil and cottonoil as mentioned above, any supplies so acquired could be channeled into a program of this kind.

The drive in Congress to reenact high rigid price supports barely scraped through the House earlier this year when HR 12 was passed by the narrow margin of 205 to 201. Generally overlooked in reports of the proceedings was the cleverest political maneuvering in quite some time. The opponents of high rigid supports introduced and were able to pass an amendment to HR 12 which would have eliminated peanuts from the list of basic commodities. This placed the farm bloc proponents of high supports in a most untenable position. This was especially true for those from the peanut producing areas. They could not afford to vote for high supports and thereby eliminate one of the sacred cows from the basic list. Neither could they afford to vote against high supports. A way out of the dilemma was found overnight after a hurried adjournment and by considerable and hard work on the part of the majority leadership which succeeded in reversing the vote on the amendment. Actually peanuts are not a basic commodity under any reasonable definition of the term. It was reported at that time that the House Agricultural Committee would later hold hearings and consider separately the question as to whether peanuts should be continued as a basic.

HR 12 then moved on to the Senate where it is encountering further troubles. The Senate Committee on Agriculture and Forestry by a vote of 8 to 7 agreed to begin hearings which are scheduled for termination whenever a majority of the Committee agrees. So long as the opponents of high supports can hold this majority, the hearings may continue without any action. Nothing to date indicates any ability to pass high support legislation over a veto.

The question of a separate government classification for fats and oils was revived in June when a meeting was held under the auspices of the Bureau of the Budget. At this meeting representatives of practically all of the fats and oils industry were unanimous in wanting a separate classification in preference to the present system under which some of the industry is included in the food category and other parts in the chemical industry classification. These classifications are important to the industry because they are used in the collection and publication of various statistics. Also, they are used as a general basis for governmental organizations. In times of emergency they are used as a basis for organization for price control and allocation systems.

Although the industry was unanimous in its expressed opinion at the meeting, this is no guarantee that the recommended change will be made. The Bureau of the Budget still has the final say for the government. No representatives of the affected government agencies were at the meeting and so far as known their opinions on the subject have not been requested. The only possible objection to the change might be the fact that the Bureau of the Budget may use the excuse that there are no separate classification numbers available to be assigned to oils and fats. In addition as so often happens in discussions of this kind, this agency may simply not want to make any change for no reason apparent to persons outside the government.

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Carbide Book on Glycols

A new 60-page book describing glycols was published last month by Carbide and Carbon Chemicals Co., New York. Twelve commercial glycols and triols sold by Carbide are covered in detail. Uses and suggested applications include, among others, automotive specialties and coolants. Information in tabular form covers properties, shipping, specifications, test methods, and constant boiling mixtures. Physical property data are given in 33 charts and a list of references is appended.

SYNTHETIC DETERGENTS

and Emulsifiers—Up to Date

Part II of Four

By John W. McCutcheon

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Chel 242 242L 242P	Geigy Chemical Corp.	An ethylene diamine salt	Sequestrant Dispersant	Solid	100%	Anionic	Designed to sequester iron salts under highly alkaline conditions
Chemoil 412	Standard Chemical Co.	A sulfonated castor oil	Emulsifier	Liquid	50%	Anionic	A textile lubricant, and dye assistant
Chemsol 935-N	Synthron, Inc.	An organic polyphosphate	Dispersant Wetting	Paste	68%	Nonionic	A textile dye dispersant
Chiffon Liquid (retail)	Armour & Co.	A formulated product	Detergent	Liquid			A detergent for dishes and fine fabrics
Chlorsol	E. F. Drew & Co.	Polyoxyalkylene ester	Emulsifier	Liquid		Nonionic	A chlordane emulsifier; see also "Emcol H-83T" for same purpose
Clavanol Conc.	Dexter Chemical Co.	A high molecular weight polyethylene glycol condensation product	Detergent Emulsifier	Liquid	100%	Nonionic	A textile dye assistant for general use; also for use in washing, desizing and scouring operation
Clavolene Conc.	Dexter Chemical Co.	A high molecular weight amide condensation product	Detergent Wetting	Liquid	100%	Nonionic	Stable to mild acid and alkali concentrations; useful in textile dye leveling, scouring, and wetting out operations; particularly useful in removing spinning oils and waxes
Clearate Special Extra	W. A. Cleary Corp. (Sales agents, Naftone, Inc.)	Soya lecithin	Dispersant Wetting	Liquid		Nonionic	Dispersant in inks, paints, foods, etc.
Clearate WD LV	W. A. Cleary Corp. (Sales agents, Naftone, Inc.)	Soya lecithin derivatives	Dispersant Wetting	Liquid	56%	Nonionic	"Clearate WD" is primarily for use as a pigment dispersant and anti-flocculant in water-base paint systems, etc. "Clearate LV" is a soya lecithin product drastically reduced in viscosity to facilitate handling and effective use
Clearex	Miranol Chemical Co.	Sulfonated fatty acid amide	Detergent	Paste	55%	Anionic	A shampoo base material
Comperlan KM	Fallek Products Co.	Fatty acid ethanolamide	Foam stabilizer	Paste	30%	Nonionic	Shampoos and bubble bath, thickener and foam stabilizer
Compound 132D	Onyx Oil & Chemical Co.	Sodium decyl sulfate	Wetting	Paste	48%	Anionic	For use in fire extinguishers
Cordon #810 700/75 PB870 NB870 and LB870 890 900	Fintex Co.	Sulfonated oils and acids	Emulsifier	Liquid		Anionic	A series of compounds for use in textile lubrication, leather finishing and paper coating; "#810" is derived from red oil, "700/75" from olive oil, "870" from tall oil, "890" from castor oil and "900" from sperm oil
Cream Suds Granules	Procter & Gamble Co.	Essentially sodium alkyl aryl sulfonate	Detergent	Granules		Anionic	Built detergent and cleaner for institutional maintenance
Creolite-NC	Perkins Soap Co.	Compound of surface active agent in a 20% cresylic acid base	Wetting Detergent	Liquid		Anionic	Textile scouring
CTA Stearate	Fine Organics, Inc.	Cetyl trimethyl ammonium stearate	Germicide	Solid	100%	Cationic	A poultry feed ingredient
D-Lite	Du Bois Co.	Built alkyl aryl sulfonate	Detergent	Powder		Anionic	Institutional hand dishwashing
D-Spers-O-AC	Planetary Chemical Co.	Condensation product of a polyglycol, fatty acid and sodium sulfosuccinic acid	Emulsifier	Liquid	100%	Nonionic	Acid and hard water resistant; use: agricultural sprays for chlordane, etc.
D-Spers-W	Planetary Chemical Co.	Condensation product of a polyglycol, fatty acid and sodium sulfosuccinic acid	Emulsifier	Liquid	100%	Nonionic	Water soluble; use: insecticide sprays, dry cleaning, etc.
Darvan No. 1	R. T. Vanderbilt Co. (Mfd. by Dewey & Almy Chemical Co.)	Sodium salt of polymerized alkyl aryl sulfonic acid (alkyl, short chain) (probably a formaldehyde condensation product)	Dispersant	Powder	100%	Anionic	Soluble in water up to 40%; pH of one percent solution 7-9.5; uses: dispersant for latex, carbon black, whiting, clay, etc.; compare also with "Daxad No. 11"

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Darvan No. 2	R. T. Vanderbilt Co. (Mfg. by Dewey & Almy Chemical Co.)	Sodium salt of polymerized alkyl aryl sulfonic acid (alkyl-long chain)	Dispersant	Powder	100%	Anionic	Maximum water solubility—25%; an emulsion stabilizer; dispersant for latex, paper, leather; particularly for zinc oxide, titanium dioxide, sulfur, etc.
Dash (retail)	Procter & Gamble Co.		Detergent	Granules		Anionic	A built all-purpose low sudsing detergent
Daxad No. 11	Dewey & Almy Chemical Co. (Div. of W. R. Grace & Co.)	Polymerized sodium salts of alkyl naphthalene sulfonic acid (alkyl, short chain)	Dispersant	Powder	77%	Anionic	Maximum solubility in water is 40%. Oil-in-water emulsifier; dispersing agent for latex, paper, leather, etc.; compare also with "Darvan No. 1"
Daxad 11KLS	Dewey & Almy Chemical Co. (Div. of W. R. Grace & Co.)	Polymerized potassium salts of alkyl naphthalene sulfonic acids	Dispersant	Solid	77%	Anionic	Recommended for the same general uses as "Daxad 11," except where low sodium content is most desirable. "LS" stands for low sulfate content
Daxad No. 21	Dewey & Almy Chemical Co. (Div. of W. R. Grace & Co.)	Mono calcium salt of a polymerized alkyl aryl sulfonic acid (alkyl-long chain)	Dispersant	Powder	92%	Anionic	Water solubility approximately 25% at 72°F; insoluble in mineral oils, alcohol, kerosene, etc.; dispersant for solids in water, as calcium salts in manufacture of wallboard, etc.
Daxad No. 23	Dewey & Almy Chemical Co. (Div. of W. R. Grace & Co.)	Sodium salts of polymerized substituted benzoid alkyl sulfonic acid (alkyl-long chain)	Dispersant	Powder	85%	Anionic	Water soluble; an emulsion stabilizer against acids, alkalis, and temperature change; dispersant for paper, textile and mining industry; compare also with "Darvan No. 2"
Daxad No. 27	Dewey & Almy Chemical Co. (Div. of W. R. Grace & Co.)	Sodium salt of a substituted benzoid alkyl sulfonic acid combined with an inert inorganic suspending agent	Dispersant	Powder	85%	Anionic	Uses: dispersant and emulsifier for agricultural sprays
DBT	Fine Organics, Inc.	Dodecylbenzyl trimethyl ammonium chloride	Algaecide	Liquid	50%	Cationic	For control of algae in cooling water systems
Decab	Fairfield Laboratories	Octadecenyl—9, dimethyl benzyl ammonium chloride (molecular weight: 417)	Germicide	Solid	99%	Cationic	Similar to "Octab"; alkyl group derived from oleic acid; water and benzene soluble; phenol coefficient at 37°C. against S.A. 175-200; uses: algaecide, deodorant, sanitizer, etc.
Decersol OT	American Cyanamid Co.	Dioctyl ester of sodium sulfo succinic acid	Wetting	Liquid	25%	Anionic	Name used in textile trade for "Aerosol"; see "Aerosol OT"
Dehydag Sulfate Extract A	Fallek Products Co.	Lauryl alcohol ammonium sulfate		Liquid	33-35%	Anionic	Shampoo base
Dehydag Sulfate Extract N 40	Fallek Products Co.	Fatty alcohol sulfate	Detergent	Liquid	28%	Anionic	Liquid shampoos
Dehydag Sulfate Extract Special	Fallek Products Co.	Lauryl alcohol ammonium sulfate	Detergent	Liquid	46-48%	Anionic	Liquid shampoos, and bubble bath
Dehydag Sulfate Extract T	Fallek Products Co.	Lauryl alcohol triethanolamine sulfate	Detergent	Liquid	50-55%	Anionic	Liquid shampoos, and bubble bath
Dehydag Sulfate CS	Fallek Products Co.	Sodium lauryl sulfate	Detergent	Paste	60%	Anionic	Cream shampoos
Dehydag Sulfate F	Fallek Products Co.	Fatty alcohol sodium sulfate with phosphates	Detergent	Powder	45%	Anionic	Basic material for fine washing (rinsing) preparations
Dehydag Sulfate F 35	Fallek Products Co.	Compound of synthetic active substances	Detergent	Powder	35%	Anionic	For fine washing and rinsing preparations
Dehydag Sulfate K 12	Fallek Products Co.	Pure lauryl sodium sulfate	Detergent: Wetting Dispersant	Powder	90+%	Anionic	Cosmetic preparations, tooth paste
Dehydag Sulfate Oil P	Fallek Products Co.	Fatty alcohol sodium sulfate	Detergent	Liquid	28%	Anionic	For detergents, cleansing and rinsing agents, wetting agents
Dehydag Sulfate T Paste	Fallek Products Co.	Fatty alcohol triethanolamine sulfate	Detergent	Paste	80-82%	Anionic	Shampoos
Dehydag Sulfate Z	Fallek Products Co.	Fatty alcohol sodium sulfate	Detergent Wetting Dispersant	Powder	58-62%	Anionic	Powder shampoos, bubble bath, toothpaste, insecticides, paint

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Dehydag Sulfate Z High Concentrated Powder	Fallek Products Co.	Fatty alcohol sodium sulfate	Wetting	Powder	87%+	Anionic	Shampoos, toothpaste
Dehydag Sulfate Z High Concentrated Needles	Fallek Products Co.	Fatty alcohol sodium sulfate	Wetting	Needles	88%+	Anionic	Shampoos, toothpaste, pharmaceutical preparations
Dehydag Wax E	Fallek Products Co.	Sodium salts of higher saturated fatty alcohol sulfuric acid esters	Emulsifier	Powder	85%	Nonionic	Emulsions, (O/W type)
Dehydol 100	Fallek Products Co.	Fatty alcohol ethylene oxide	Detergent Wetting	Paste	100%	Nonionic	For insecticides, cleansing products; low foaming detergent
Demal-14	Emulsol Chemical Corp.	Polyglycerol ester of oleic acid	Emulsifier	Liquid		Nonionic	A cosmetic and pharmaceutical emulsifier
Dergon OM	Arkansas Co.	Amino fatty acid ester	Detergent Wetting	Liquid	95%	Nonionic	Textile, leather, scouring wool, synthetic fibers, shearlings
Dergon MF	Arkansas Co.	An alkoxypolyglycol fatty acid ester	Detergent	Liquid	90%	Nonionic	Textile: scouring wool and synthetic fibers; low foaming type
Dergon T	Arkansas Co.	A built detergent from a fatty acid ester sulfate	Detergent	Liquid	60%	Anionic	A textile scouring agent for wool and acetates
Dergon PX	Arkansas Co.	Alkoxypolyglycol fatty acid ester	Wetting	Liquid	50%	Nonionic	A textile wetting agent for use with cationics
Dergopen RD	Arkansas Co.	Alkyl phenoxy polyether alcohol	Detergent Wetting	Liquid	40%	Nonionic	A textile surface active agent for many uses; particularly for rewetting
Dermolate	White Laboratories, Inc.	High molecular weight saturated fatty acids, et. al.	Detergent	Solid		Anionic	A non-irritating hypo-allergenic lathering skin detergent in cake form
Detanol A	Commonwealth Color & Chemical Co.	Sodium salt of an alkyl sulfonate	Detergent Wetting		18%	Anionic	Textile
Detergent D-40 D-40-SF D-40-FG D-60	Oronite Chemical Co.	Alkyl aryl sodium sulfonate	Detergent Wetting	Granular	40%	Anionic	General industrial and household cleaning agents; drum dried detergents of light color, bland odor, and possessing high surface activity in acidic or alkaline solutions, and in soft or hard water; "D-40 SF" is flake form; "D-40-FG," powder form; "D-60" is 56%, granular form
Detergent CF-10	Rohm & Haas Co.	An alkyl phenol condensed with ethylene oxide	Detergent	Liquid	100%	Nonionic	Similar to "Triton X-100" but with greater alkali stability; useful as a low sudsing hard surface cleaner
Detergent-G	Joseph Turner & Co.	Dodecylbenzene sodium sulfonate	Detergent	Powder	40%	Anionic	Detergent for general industrial use
Detergent L-89	Jacques Wolf & Co.		Wetting	Liquid	35%	Nonionic	Wetting agent for leather and textiles
Detergent-M	Ciba Co.	Amino condensation product	Detergent	Solid	14%	Anionic	Water soluble; pH of one percent solution at 25°C.—8.5
Detergent-MXP	Monsanto Chemical Co.	A built powder containing Sterox CD	Detergent	Powder		Nonionic	A compounded non-sudsing detergent; stable to strong alkali; uses: intermediate, textiles; industrial cleaning
Detergent Sanitizer Conc.	Onyx Oil & Chemical Co.	Mixture of "BTC-100%" and "Neutronyx 600," in ratio 1:1	Germicide Detergent	Liquid	100%	Cationic	Product contains cationic germicide with nonionic wetting agent. Use: sanitizing detergent
Detergent Slurry	Oronite Chemical Co.	Alkyl aryl sodium sulfonate	Detergent	Slurry	42%	Anionic	A slurry for spray or drum drying purposes
Detergent-77	Peck's Products Co.		Detergent	Liquid		Nonionic	General household and industrial cleaner
Detergent 80	Peck's Products Co.	An alkanolamine condensate	Detergent	Liquid	20%	Nonionic	An industrial cleaner
Detergent 220	E. F. Drew & Co.	A coconut oil amino condensate	Detergent	Liquid	100%	Anionic	An all-purpose cleaner designed for use with high concentrations of phosphate salts
Detergent 1011	E. F. Drew & Co.	A secondary amide derivative of lauric and related acids	Detergent	Liquid	100%	Nonionic	See also "Wetsyn"
Detergol 1426	L. Sonneborn Sons, Inc.		Detergent	Liquid	100%		Textile use
Detersol	Standard Chemical Products, Inc.	A built syndet-soap	Detergent	Paste		Anionic	A textile product for boiling off operations

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Dexolene G B MTV	Dexter Chemical Co.	Sodium dioctyl sulfosuccinate	Wetting Penetrant	Liquid		Anionic	A textile wetting agent
Dextro Fast Salt M	Dexter Chemical Co.	A polyoxylated fatty alcohol	Dispersant	Liquid		Nonionic	A textile dyeing assistant for acid and chrome dyes, as a dispersant and leveling agent
Dial Shampoo (retail)	Armour & Co.	A blend of several synthetic detergents	Detergent	Liquid		Anionic	Shampoo
Dianol ANC ANX	Quaker Chemical Products Corp.	Alkyl aryl sulfonate	Detergent Wetting	Liquid	30%	Anionic	Textile uses; "Dianol ANX" is 40% active, otherwise similar
Dianol ANS	Quaker Chemical Products Corp.	Alkyl aryl sulfonate	Detergent Wetting	Paste	43%	Anionic	Textile uses
Dianol G	Quaker Chemical Products Corp.	Fatty amide condensate	Detergent Wetting	Liquid	98%	Nonionic	Industrial cleaning agent
Dianol N	Quaker Chemical Products Corp.	Fatty amide sulfate	Detergent	Liquid	30%	Anionic	Neutral detergent for textile and general uses
Dianol S	Quaker Chemical Products Corp.	Fatty amide sulfate	Detergent	Paste	24%	Anionic	Textile and general industrial detergents
Dianol 11	Quaker Chemical Products Corp.	Alkyl aryl sulfonate	Wetting	Liquid	45%	Anionic	Textile uses
Dianol 20	Quaker Chemical Products Corp.	Ester sulfate	Wetting	Liquid	65%	Anionic	Textile uses
Diazapon AN	Antara Chemicals, a sales div. of General Aniline & Film Corp.	Polyoxyethylated fatty alcohol	Dispersant Wetting	Liquid	33%	Nonionic	Soluble in water; stable to strong acids, alkalies and metallic ions; dispersing and stabilizing agent in the naphthol dyeing process; stabilizer for diazonium compounds
Dichloran	Fine Organics, Inc.	Alkyl dimethyl dichlorobenzyl ammonium chloride	Germicide	Liquid	50%	Cationic	Bactericide and sanitizing agent
Diglycol-laurate -oleate -stearate	Carlisle Chemical Works Glyco Products Co. C. P. Hall Co. Kessler Chemical Co. Van Dyk & Co.	As named	Emulsifier		100%	Nonionic	Laurate, water insoluble; stearate is water dispersible. Uses: general water-in-oil emulsifier for cosmetics, foods, etc.
Dispersant NI-W	Oronite Chemical Co.	Condensation product of ethylene oxide and an alkyl phenol	Detergent Wetting	Liquid	92%	Nonionic	Water soluble; a low sudsing detergent especially for use in laundries and in automatic washing machines
Dispersant NI-O	Oronite Chemical Co.	Condensation product of ethylene oxide and an alkyl phenol	Emulsifier Detergent	Liquid	100%	Nonionic	Oil soluble; water-in-oil emulsifier; uses: dry cleaning detergent, etc.
DMBC	Fine Organics, Inc.	Lauryl dimethylbenzyldimethyl ammonium chloride	Germicide	Liquid	50%	Cationic	Sanitizing agent; see under "Germitol"
DMBC Special	Fine Organics, Inc.	Mixture of alkenyl dimethyl ethyl ammonium bromide and lauryl dimethyl benzyl dimethyl ammonium chloride	Germicide Algaecide	Liquid	70%	Cationic	Effective for control of algae and as a sanitizing agent
Do All	Armour & Co.	Built alkyl aryl sodium sulfonate	Detergent	Bead		Anionic	Built all-purpose detergent for domestic or industrial use
Dreft	Procter & Gamble Co.		Detergent	Granules		Anionic	Built detergent for dishes and fine fabrics
Drene (retail)	Procter & Gamble Co.		Detergent	Liquid		Anionic	Hair shampoo
Dri-It	Du Bois Co.	Ethylene oxide condensate	Drying agent	Liquid	50%	Nonionic	Used in rinse water to promote rapid drying
Drucal CH	E. F. Drew & Co.	Sodium lauroyl isethionate	Detergent	Powder	95%	Anionic	Sudsing detergent for use in creme shampoos, household detergents, powdered domestic cleaners, etc.
Drucolene RT	E. F. Drew & Co.	A blend of sulfated oil and coconut oil	Softener Anti-static	Liquid	85%	Anionic	A synthetic softener and plasticizer

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Drucolene 240	E. F. Drew & Co.	A blend of white oils, sulfated oils, softeners, emulsifiers and antistatic agents	Anti-static	Liquid	100%	Anionic	For use on rayon cones, cakes or skeins, to facilitate running qualities of the yarn; possesses antistatic properties
Drucomine A	E. F. Drew & Co.		Softener	Paste	50%	Cationic	A durable softener for all fibers
Drukeel 8	E. F. Drew & Co.	Sodium polyamino—carboxylate	Sequestrant	Liquid	47%	Anionic	Sequestering agent for calcium, magnesium and iron
Drulan LAV	E. F. Drew & Co.	Blend of fatty acid protein condensate with anionic detergent	Detergent	Paste	45%	Anionic	Scouring agent for wool and cashmere
Drumul C	E. F. Drew & Co.	Blend of solvents and nonionic emulsifiers	Emulsifier	Liquid	100%	Nonionic	Paint and tar remover on textiles for general use except under acid conditions
Drumul 30W	E. F. Drew & Co.	Purified polyoxyethylene fatty ester	Emulsifier	Liquid	100%	Nonionic	Emulsifier for mineral oils
Drupene TOL	E. F. Drew & Co.	Blend of high sulfated castor and other fatty oils	Penetrant	Liquid	50%	Anionic	Dyeing assistant for direct colors on cotton and viscose
Druspin PF	E. F. Drew & Co.	A blend of modified substituted oleoyl glyoxalidine ethyl sulfate	Lubricant Anti-static	Liquid	96%	Cationic	Useful on all hydrophobic fibers
Druspin WLA	E. F. Drew & Co.	A blend of paraffin hydrocarbons and nonionic emulsifiers	Lubricant	Liquid	100%	Anionic	A new type wool oil—offers static protection
Druspin WOR	E. F. Drew & Co.	Blend of modified substituted oleoyl glyoxalidine ethyl sulfate and nonionic emulsifiers	Lubricant Anti-static	Liquid	100%	Cationic	Anti-static fiber lubricant for processing wool, etc.
Drustat —F —H	E. F. Drew & Co.	A substituted oleoyl glyoxalidine ethyl sulfate	Lubricant Anti-static	Liquid, Paste	100%	Cationic	Anti-static finish for all new hydrophobic fibers and for wool; "Drustat F"—and "Drustat H" are slightly modified products
Druterge NCR	E. F. Drew & Co.	Blend of coconut fatty acid amine condensate and polyoxyethylene alkyl aryl ether	Emulsifier	Liquid	97%	Nonionic	To increase fastness to crocking of naphthol dyeings—for soaping off naphthols and prints, etc.
Druterge NT	E. F. Drew & Co.	Polyoxyethylene ester of tall oil derivative	Emulsifier	Liquid	95%	Nonionic	Textiles
Druterge ON	E. F. Drew & Co.	Alkyl aryl polyoxyethylene ether	Detergent Emulsifier Wetting	Liquid	100%	Nonionic	Stable in acid and alkaline solutions, hard water, etc.
Druterge TG Conc.	E. F. Drew & Co.	Oleoyl methyl tauride sodium salt	Emulsifier	Liquid	33%	Anionic	Versatile textile surfactant, dyeing assistant, lime soap dispersant, etc.
Druterge PE	E. F. Drew & Co.	A blend of solvents, anionic emulsifiers and pine oil	Emulsifier	Liquid	50%	Anionic	Cleaning polyester fibers of all foreign matter particularly graphite and black oil
Druterge PMV	E. F. Drew & Co.	A balanced blend of coconut fatty acid amino condensates, anionics and pine oil	Emulsifier	Liquid	—	Anionic	Scouring agent
Druterge RCS	E. F. Drew & Co.	Blend of synthetic detergents, anionics and solvents	Emulsifier	Liquid	—	Anionic	Possesses fulling and milling properties
Druterge 2HVS	E. F. Drew & Co.	Blend of anionic and nonionic detergents	Detergent	Paste	66%	Anionic	Used in processing cashmere, etc.
Druterge CR	E. F. Drew & Co.	A coconut fatty acid amino condensate	Detergent	Liquid	100%	Anionic	Detergent for all textile wet processing operations
Druterge NCE	E. F. Drew & Co.	Vegetable oil ethylene oxide condensate	Detergent Emulsifier	Liquid	100%	Nonionic	Detergent for acid fulling and scouring
Drutone D	E. F. Drew & Co.	Sulfated glyceryl trioleate and coconut oil	Lubricant	Liquid	60-62%	Nonionic	Imparts silky hand to cottons
Drutone NYL	E. F. Drew & Co.	Blend of sulfated synthetic ester and coconut oil	Lubricant	Liquid	85%	Nonionic	Nylon parachute fabric finish
Drutone SE	E. F. Drew & Co.	Sulfated glyceryl trioleate	Lubricant	Liquid	60-62%	Nonionic	Finish for synthetic fibers
Duofol L	Hart Products Corp.	Highly sulfonated ester	Penetrant Wetting	Liquid	60%	Anionic	pH of one percent solution at 25°C.—6.5; Drave's sinking time 0.1% solution—15 seconds; uses: textiles, wetting out, sanforizing

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Duponol C	E. I. du Pont de Nemours & Co.	Sodium lauryl sulfate	Detergent	Powder		Anionic	Meets specification of U.S.P. XIV
Duponol D Paste	E. I. du Pont de Nemours & Co.	Mixed fatty alcohol sodium sulfate	Detergent	Paste		Anionic	General heavy duty detergent; dyeing assistant
Duponol EP	E. I. du Pont de Nemours & Co.	Fatty alcohol alkylolamine sulfonate	Detergent	Liquid		Anionic	Shampoo base
Duponol G	E. I. du Pont de Nemours & Co.	Fatty alcohol amine sulfate	Emulsifier	Paste		Anionic	Oil soluble emulsifying agent
Duponol L-144-WDG	E. I. du Pont de Nemours & Co.	Fatty alcohol sodium sulfate	Emulsifier	Liquid		Anionic	An emulsifier for dry cleaning use and for fungicidal sprays
Duponol L-142	E. I. du Pont de Nemours & Co.	Fatty alcohol sodium sulfate	Emulsifier	Powder		Anionic	For emulsifying and emollient effects in cosmetics
Duponol LS Paste	E. I. du Pont de Nemours & Co.	Technical oleyl alcohol sulfate	Detergent	Paste		Anionic	Scouring agent
Duponol ME Dry	E. I. du Pont de Nemours & Co.	Technical lauryl alcohol sulfate	Detergent Wetting	Powder		Anionic	Wetting properties are very efficient. Detergency is excellent. Minimum electrolyte
Duponol OS	E. I. du Pont de Nemours & Co.	Fatty alcohol amine sulfate composition	Emulsifier	Liquid			Emulsifying agent for O/W emulsions
Duponol PC	E. I. du Pont de Nemours & Co.	Sodium lauryl sulfate	Wetting Detergent Emulsifier	Powder		Anionic	Specially processed for use in dental preparations; Meets specification of U.S.P. XIV
Duponol RA	E. I. du Pont de Nemours & Co.	Alcohol ether sodium sulfate	Emulsifier Detergent Wetting	Liquid		Anionic	Textile detergent
Duponol SN	E. I. du Pont de Nemours & Co.	Fatty alcohol sodium sulfate	Detergent	Liquid		Anionic	A shampoo base
Duponol ST	E. I. du Pont de Nemours & Co.	Fatty alcohol triethanolamine sulfate	Detergent	Liquid		Anionic	A shampoo base
Duponol WA Paste WA Dry	E. I. du Pont de Nemours & Co.	Technical lauryl sodium sulfate	Detergent Wetting Dispersant	Paste		Anionic	More water-soluble than "Duponol D" and lathers better in cold water. "Duponol WA Dry" is the same in powder form
Duponol WAQ	E. I. du Pont de Nemours & Co.	Technical lauryl sodium sulfate	Detergent	Paste		Anionic	Fluid paste designed for shampoos
Duponol WAT	E. I. du Pont de Nemours & Co.	Triethanolamine salt of lauryl sulfate	Detergent	Liquid		Anionic	Suitable for shampoos and related cosmetic products
Duponol 80	E. I. du Pont de Nemours & Co	Octyl alcohol sodium sulfate	Emulsifier Dispersant	Liquid		Anionic	Very soluble; used in electroplating baths, tanning of leather, textiles, etc.
Dynesol EP	Amalgamated Chemical Corp.	Sulfated fatty ester	Wetting Rewetting Dispersant	Liquid	65%	Anionic	Penetration, stabilizing dyebath, sanforizing
Dynesol F20	Amalgamated Chemical Corp.	Sulfonated polyester of an aliphatic alcohol	Wetting	Liquid	20%	Anionic	Use: textiles for wetting and rewetting operations
Dynesol K50 R50	Amalgamated Chemical Corp.	Sodium salt of sulfonated mono and di amyl naphthalene	Penetrant Wetting	Liquid	35%	Anionic	Oil-in-water emulsifiers; textiles; "Dynesol R50" is a 50% solution of an alkyl aryl sulfonate of less wetting, but greater foaming ability than "K50." In paste form, it is used as a textile scouring aid.
Ekaline F	Sandoz Chemical Works, Inc.	Polyoxyethylated fatty alcohol	Dispersing	Liquid		Nonionic	Dispersing and leveling agent for use in dyeing with metalized colors
Emargol	Emulsol Chemical Corp.	Sodium sulfoacetates of mono and di glycerides	Emulsifier			Nonionic	An anti-spattering agent for margarine, shortening, etc.
Emcol 14	Emulsol Chemical Corp.	Polyglyceride ester of a fatty acid	Emulsifier			Nonionic	An antifoaming agent for baking, etc.
Emcol 607-S	Emulsol Chemical Corp.	Quaternary ammonium compound	Germicide	Powder	90%	Cationic	Cosmetic applications
Emcol 4150	Emulsol Chemical Corp.	Complex fatty acid derivative of aliphatic sulfonate	Detergent Wetting	Liquid	35%	Anionic	Completely water soluble; for cosmetics, textiles
Emcol 4400	Emulsol Chemical Corp.	Blend of sulfonates and fatty amides	Detergent	Liquid	90%	Anionic	Used in the formulation of liquid detergents
Emcol 5100	Emulsol Chemical Corp.	Alkanolamine fatty acid condensate	Detergent Wetting	Liquid	90%	Nonionic	Solution becomes viscous with addition of water; thickening agent; emulsifier, etc.
Emcol 5130 5137	Emulsol Chemical Corp.	Alkanolamine condensate	Detergent	Liquid	97%	Nonionic	Water soluble, moderate foaming; "Emcol 5137" is used mainly in compounding liquid detergent formulations.
Emcol 5138A	Emulsol Chemical Corp.	Alkanolamine condensate	Detergent	Liquid	97%	Nonionic	Dry cleaning detergent

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Emcol E-11	Emulsol Chemical Corp.	Alkyl benzyl triethyl ammonium chloride	Germicide Anti-static	Liquid	50%	Cationic	Primarily intended for industrial use
Emcol H-50A	Emulsol Chemical Corp.	Fatty acid condensation product of a polyhydric alcohol	Emulsifier	Liquid	100%	Nonionic	An oil-in-water emulsifier; for DDT sprays in aliphatic solvents
Emcol H-65C	Emulsol Chemical Corp.	Blend of polyalcohol carboxylic esters and oil-soluble sulfonates	Emulsifier	Liquid		Anionic	Designed to give a 2% clear dispersion of chlordane in water
Emcol H-77	Emulsol Chemical Corp.	Blend of polyalcohol carboxylic acid esters and sulfonated oils	Emulsifier	Liquid		Anionic	For the formulation of a wide range of agricultural emulsifiable concentrates
Emcol H-83T	Emulsol Chemical Corp.	Blend of polyoxyethylene ethers and oil-soluble sulfonates	Emulsifier	Liquid		Anionic	Emulsifier for chlordane, toxaphene
Emcol H-140	Emulsol Chemical Corp.	Blend of polyoxyethylene ethers and oil-soluble sulfonates	Emulsifier	Liquid		Anionic	Designed for five pound/gallon of malathion formulation
Emcol H-141	Emulsol Chemical Corp.	Blend of polyoxyethylene ethers and oil-soluble sulfonates	Emulsifier	Liquid		Anionic	Designed for eight pounds/gallons of malathion formulation
Emcol H-400 H-500 H-600	Emulsol Chemical Corp.	Blend of polyoxyethylene ethers and oil-soluble sulfonates	Emulsifier	Liquid		Anionic	For the formulation of a wide range of agricultural emulsifiable concentrates
Emcol K-8300	Emulsol Chemical Corp.	Complex aliphatic sulfonate	Emulsifier Stabilizer	Liquid	35%	Anionic	Emulsifier for the preparation of latices, for use in synthetic latices and other polymer emulsions
Emcol MS MST	Emulsol Chemical Corp.	Glycerol monostearate	Emulsifier	Solid	100%	Nonionic	Emulsifier for foods, e.g., margarine, etc.; see also "Tegin," "Aldo 33"; "Emcol MST" is from hardened oils
Emcol P1059	Emulsol Chemical Corp.	Amine salt of sulfonic acid	Emulsifier	Liquid		Anionic	Oil soluble
Emcol RDCD	Emulsol Chemical Corp.	Diethylene glycol laurate	Emulsifier	Liquid	100%	Nonionic	Surface tension of 0.1% solution 31 dynes/cm.
Emcol RGL	Emulsol Chemical Corp.	Mono and diglycerol esters of fatty acids	Emulsifier	Paste		Nonionic	An emulsifier in plastic form for use in cake mixes, etc.
Emcol RHT	Emulsol Chemical Corp.	Blend of mono- and diglycerides of fatty acids	Emulsifier	Solid	100%	Nonionic	Edible; used in food, cosmetic and pharmaceutical preparations
Emcol W-21	Emulsol Chemical Corp.	Sodium salt of sulfonated acid	Wetting	Paste	25%	Anionic	Wetting and foaming agent in acid media
Emkabase	Emkay Chemical Co.	Naphthenic, amino sulfonate blend	Emulsifier	Liquid		Anionic	Emulsifier for mineral oil
Emkafol D	Emkay Chemical Co.	Highly sulfonated fatty acid ester	Wetting Rewetting	Liquid		Anionic	Wetting and rewetting agent
Emkafol OT	Emkay Chemical Co.	Sulfonated fatty ester	Rewetting	Liquid		Anionic	
Emkafol S	Emkay Chemical Co.		Penetrant	Liquid		Anionic	Scouring agent for lime and iron spots
Emkagen 49	Emkay Chemical Co.	Blend of amino condensate and alkyl aryl sulfonate	Detergent	Liquid		Anionic	Print washing
Emkagen BT	Emkay Chemical Co.	Amino-condensate blend	Detergent	Liquid		Nonionic	Synthetic detergent for wool scouring
Emkagen Concentrate	Emkay Chemical Co.	Amide amino condensate	Detergent Wetting Emulsifier	Liquid	100%	Nonionic	Synthetic detergent
Emkanyl 85	Emkay Chemical Co.	Nonionic glycol condensate	Leveling	Liquid		Nonionic	Dyeing assistant for nylon
Emkapon L	Emkay Chemical Co.	Amide sulfonate	Detergent	Paste		Anionic	
Emkaron	Emkay Chemical Co.	Alkyl aryl sulfonate with solvents		Liquid		Anionic	Semibleach and dyeing assistant for "Orlon"
Emkasol	Emkay Chemical Co.	Sulfonated oil base	Dispersant	Liquid		Anionic	Dyeing assistant
Emka Supertex	Emkay Chemical Co.	Alkyl aryl sulfonate blended with sulfonated isopropyloleate	Wetting	Liquid		Anionic	Dyeing assistant
Emkatex A-1	Emkay Chemical Co.	Amino condensate with solvents	Detergent	Liquid		Anionic	Dyeing assistant
Emkatex BC	Emkay Chemical Co.	Alkyl aryl amide condensate blend		Liquid		Anionic	Dyeing assistant; leveler for acid dyebaths
Emkatex CF 32	Emkay Chemical Co.	Amino condensate with penetrants	Detergent	Liquid		Anionic	Detergent for heavy cotton duck twills
Emkatex F 2, LW	Emkay Chemical Co.	Blends of a synthetic detergent and solvents	Detergent	Liquid		Nonionic	Cleaner
Emkatex N-25	Emkay Chemical Co.			Liquid		Nonionic	Dyeing assistant; leveler; antistatic agent

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Emkatex 49-P	Emkay Chemical Co.	Alkyl aryl blend with pine oil	Wetting Emulsifier Detergent	Liquid		Anionic	Scouring agent; dyeing assistant
Emkaterge B	Emkay Chemical Co.	Synthetic detergents with alkyl terpenes		Liquid		Nonionic	Base product for compounding, graphite remover
Emulgade F	Fallek Products Co.	Mixture of higher saturated fatty alcohols and fatty alcohol sulfates	Emulsifier	Flakes	100%	Anionic	For liquid emulsions cosmetic and pharmaceutical creams and ointments O/W type
Emulphogene AM-870	Antara Chemicals, a sales div. of General Aniline & Film Corp.	Tallow alcohol ethylene oxide reaction product	Emulsifier Solubilizer	Wax	100%	Nonionic	Emulsifier in rubber, textile and leather industries; used for acid degreasing of wool; surfactant for deinking of paper stock
Emulphor EL-620	Antara Chemicals, a sales div. of General Aniline & Film Corp.	Polyoxyethylated vegetable oil	Emulsifier Dispersant	Liquid	100%	Nonionic	Emulsifying agent for oils, solvents, waxes, insecticide and herbicide formulations, leather industry; emulsion stabilizer for polyester resins and polyvinyl acetate emulsion paints
Emulphor EL-719	Antara Chemicals, a sales div. of General Aniline & Film Corp.	Polyoxyethylated vegetable oil	Emulsifier Dispersant	Liquid	96%	Nonionic	Emulsifying agent for animal and vegetable fats and oils, etc.; emulsifier for herbicides and insecticides; anti-static agent and lubricant for synthetic fibers
Emulphor ON-870	Antara Chemicals, a sales div. of General Aniline & Film Corp.	Polyoxyethylated fatty alcohol	Emulsifier Stabilizer Dispersant	Wax	100%	Nonionic	Emulsifier for mineral oils, fatty acids, and waxes; stabilizer for natural or synthetic rubber latex emulsions; surfactant for use in acid degreasing of wool and in leather industry
Emulphor VN-430	Antara Chemicals, a sales div. of General Aniline & Film Corp.	Polyoxyethylated fatty acid	Emulsifier Dispersant	Liquid	99%	Nonionic	Emulsifier for mineral oils, liquid fatty oils, pesticides and cutting oils; lubricant additive in textile industry; cosmetic emulsifier
Emulsept	Emulsol Corp.	$CH_3(CH_2)_nCOOCH_2CH_2NHCOCH_2N\text{-}Cl$ with C_5H_5	Germicide Detergent	Liquid	10%	Cationic	A cationic germicide with some detergent properties
Emulsept 2X	Emulsol Corp.	Same as Emulsept	Germicide	Liquid	20%	Cationic	Double strength "Emulsept"; sold to manufacturers only
Emulser CF	Arkansas Co.	Synthetic fatty ester	Emulsifier Detergent	Liquid	90%	Nonionic	A textile product useful in removal of oils from wool
Emulside 680B	Van Dyk & Co.	Polymerized higher glycol fatty acid ester	Emulsifier	Liquid	100%	Nonionic	An oil-in-water emulsifier for agricultural sprays with DDT, chlordane, etc.; soluble in kerosene; insoluble in water
Emulsifier 803M	E. F. Drew & Co.	A blend of petroleum sulfonate, polyglycol ester and glycols	Emulsifier	Liquid			Used for preparing emulsifiable chlordane concentrates
Emulsifier G-21 61 261 861	Kessler Chemical Co.	A blend of mono- and diglycerides	Emulsifier	Paste	100%	Nonionic	Edible emulsifiers varying in plastic properties, for bakery products; "G-861" is a flake.
Emulsifier H R L M	Monsanto Chemical Co.	Blended surface active agents	Emulsifier	Paste, Liquid		Anionic	A series of emulsifiers for insecticides and herbicides; "Emulsifiers H" or "R" are designed for use with pentachlorophenol ("Santophen 20"). With chlordane in kerosene etc. use "L" or "M"
Emulsifier L-32 L-34 L-45B	Jacques Wolf & Co.	Fatty acid ester of higher polyalcohols	Emulsifier	Liquid	100%	Nonionic	An oil in water emulsifier for vegetable, animal and mineral oils; "L-32" has good solubility in organic solvents and above oils.
Emulsifier L-34A L-45	Jacques Wolf & Co.	Fatty acid ester of higher polyalcohols	Emulsifier	Liquid	96%	Nonionic	A degreasing agent with kerosene in leather industry; the "L-45" compound is 85% active and contains 15% water.

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Emulsifier O-205 O-141	Jacques Wolf & Co.	Fatty acid ester of higher polyalcohols	Emulsifier Dispersant	Liquid	100%	Nonionic	Moderately soluble in water or kerosene; not acid or alkali stable; uses: mineral, vegetable or animal oil emulsifier; degreasing or lubricating agent; "O-141" designed for use with DDT
Emulsifier P-8610	Kessler Chemical Co.	Polyhydric alcohol ester of edible saturated fatty acids	Emulsifier	Flakes	100%	Anionic	Use: as emulsifier in cosmetics and edible products
Emulsifier X-15	Kessler Chemical Co.	A fatty acid ester	Emulsifier	Liquid	100%	Nonionic	An emulsifier for aliphatic and aromatic solvents for use in textiles, leather, insecticides
Emulsifier 2 3 M-O-1	Kessler Chemical Co.	Polyglycol esters of fatty acids	Emulsifier	Liquid Solid	100%	Nonionic	"Emulsifier 2" and "3" are oil-in-water types, soluble in aliphatic and aromatic solvents for degreasing compounds, agricultural sprays, etc. "Emulsifier 3" and "M-O-1" are esters of unsaturated acids. "Emulsifier M-O-1," soluble in aliphatic solvents, is used in leather softening, textile lubrication, etc.
Emulsifier 202	Remsen Chemicals, Inc.		Emulsifier	Liquid		Anionic	Material designed for use with various types of toxicants and weed killers such as DDT, toxaphene, chlordane, etc.
Emulsifier 610-A	Van Dyk & Co.	Polyoxyethylene glycol fatty acid ester	Wetting Emulsifier	Liquid	100%	Nonionic	Water soluble; insoluble in mineral oil; uses: dispersion of pigments, cosmetic emulsifier, etc.
Energetic	Armour & Co.	Polyoxyethylene ester of fatty acids	Detergent Wetting	Liquid	90%	Nonionic	A low sudsing detergent for compounding, textile scouring, etc.
Energetic S	Armour & Co.	Polyoxyethylene ester of fatty acids plus an additive	Detergent Wetting	Liquid	94%	Nonionic	Detergent for use in the presence of petroleum and aromatic solvents; used in desizing operations, hosiery finishing, machinery cleaners, waterless hand cleaners, etc.
Energetic W-100	Armour & Co.	Polyoxyethylene alkyl phenol	Detergent Wetting	Liquid	100%	Nonionic	Sudsing type product with superior wetting agent with good detergency for use in textile wet finishing operations, compounding industrial products, etc.
Estol T-50% T-75% T-Extra	E. F. Drew & Co.	Sulfonated tallow	Emulsifier	Paste	50% 70% 38%	Anionic	Cotton finishing agents
Ethofat C/15 C/25 60/15 60/20 60/25 142/15 142/20 242/15 242/20 242/25 242/60	Armour & Co.	Polyoxyethyleneglycol esters of fatty acids	Emulsifiers Detergents Dispersant	Liquid Solid Paste	100%	Nonionic	Polyethyleneglycol fatty and/or rosin acids; "C" series from coconut fatty acids; "60" series from stearic acid and "142" and "242" from rosin and fatty acid combinations; number following slant bar minus 10 indicates number of moles ethylene oxide added to one mole of acid. "C/25, 60/15, 60/20, 60/25" are soft pastes; "142/15, 142/20, 242/15, 242/20, 242/25" are liquids; 242/60 is solid
Ethomeen C/12 C/15 C/20 C/25 T/12 T/15 T/25 S/12	Armour & Co.	Tertiary amines; ethylene oxide condensation products of the primary fatty amines	Emulsifiers Dispersant	Liquid Solid Paste	100%	Cationic	A series of condensation products of the primary amines with ethylene oxide; textile chemicals, corrosion inhibitors; "C/25; T/25" are soft pastes; 18/12, 15, 20, 60 are solids, rest are liquids.

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Ethomeen S/15 S/20 S/25 18/12 18/15 18/20 18/60	Armour & Co.	Tertiary amines; ethylene oxide condensation products of the primary fatty amines	Emulsifiers Dispersants	Liquid Solid Paste	100%	Cationic	See previous page
Ethomid C/15 RO/15 HT/15 HT/25 HT 60	Armour & Co.	Ethylene oxide condensates of fatty acid amides	Emulsifiers Dispersant Detergent	Paste Solid	100%	Nonionic	As with the "Ethofats," the letters or numbers preceding slant bar indicate from which fatty acid the amide was derived, and the numbers after the slant bar minus 10 indicate the amount of ethylene oxide added to the amide. "Ethamid C/15" is a soft paste, the rest are solids.
Ethyl Cetab	Fairfield Laboratories, Inc.	Cetyl dimethyl ethyl ammonium bromide	Germicide	Powder	100%	Cationic	Water soluble up to 25% if solvent assisted; pharmaceutical product
Ethyl Decab	Fairfield Laboratories, Inc.	Octadecenyl-9, dimethyl ethyl ammonium bromide	Germicide	Liquid	100%	Cationic	Same as "Octimet," only oleic is substituted for stearic. Algaecide and slime preventive
Eumercin RH-1 HRC W	Warwick Chemical Co.	A cresylic acid type product	Wetting Penetrating	Liquid	100%	Anionic	Wetting agents for use in increasing strength of alkali solutions in the order "RH-1, W, HRC"
Eumercin NB	Warwick Chemical Co.	A phosphorated complex alcohol	Wetting Penetrating	Liquid	20%	Anionic	A wetting agent in moderate alkali solutions; use: textiles, bottle washing
Eumulgin M 8	Fallek Products Co.	Fatty alcohol preparation	Emulsifier	Paste	80%	Nonionic	Insecticides, mineral oil and fat emulsions, emulsion shampoos, permanent waves, textile auxiliaries
Eureka 'E-2	Atlas Refinery, Inc.	Cationic derivative of a fatty acid diamine condensate	Softening	Liquid	100%	Cationic	Cationic fiber lubricant
Evenate OBX	Amalgamated Chemical Corp.	Polygylcol fatty derivative	Dispersant	Paste	50%	Nonionic	Used in conjunction with "Alk. Pdr. OBX" for one-bath scouring and dyeing of hosiery and piece goods
Evenate, SX	Amalgamated Chemical Corp.	A nonionic condensate combined with a glyceride	Dispersant	Paste	50%	Nonionic	In textiles as a dye dispersant, particularly for nylon and acetate yarns
Fab (retail)	Colgate-Palmolive Co.	An alkyl aryl sulfonate plus builders	Detergent	Powder		Anionic	A heavy duty cleanser
Felso (retail)	Fels & Co.	A built sodium alkyl aryl sulfonate	Detergent	Beads		Anionic	A heavy duty general household detergent
Finish KB	Sandoz Chemical Co.	A sulfonated fat	Emulsifier	Paste		Anionic	A textile finishing agent
Flow	DuBois Co.	Mixed alkyl aryl; alkanolamide and ether condensate	Detergent Wetter	Liquid		Anionic,	All purpose cleaner and surface tension reducer
Foamole-G	Van Dyk & Co.	Fatty alcohol and amide sulfates and sulfonates	Detergent	Liquid	50%	Anionic	A mixed synthetic suitable for shampoos
Foamole-2AC -2AC-2	Van Dyk & Co.	Polyamides of lauric and myristic acids	Wetting	Liquid		Anionic	A foaming agent, compatible with soap; "Foamole 2AC-2" is half strength
Foam Stabilizer N-22 N-55	Geigy Chemical Corp.	A fatty condensate	Foaming	Liquid	100%	Nonionic	A foam stabilizer for anionics and nonionics; "N-55" is in powder form
G-1425 1431 1441 1493	Atlas Powder Co.	A polyoxyethylene sorbitol lanolin derivative	Emulsifier	Paste	100%	Nonionic	Materials similar to lanolin in appearance and feel, yet having entirely different solubility characteristics; for cosmetic use; "G-1425" is water dispersible; "G-1441" is water soluble and "G-1493" is oil soluble. "G-1431" has more ethylene oxide and is more water soluble than "G-1425"
G-1702 1704	Atlas Powder Co.	Polyoxyethylene sorbitol beeswax derivatives	Emulsifier	Solid	100%	Nonionic	The series "G-1702-4-6" is oil dispersible. "G-1725, 1726, 1727" and "1734" are water-dis-

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
1706 1725 1726 1727 1734							persible. For cosmetic use; for preparation of O/W cold creams containing no soap; also used in O/W cosmetics
G-2000	Atlas Powder Co.	Mixture of mannitan monopalmitate	Emulsifier	Solid	100%	Nonionic	Cosmetics, wax polishes, insecticidal sprays
G-2149 2151 2152 2153	Atlas Powder Co.	Polyoxyethylene stearate	Emulsifier	Solid	100%	Nonionic	Drug and cosmetic type emulsifiers
G-2162	Atlas Powder Co.	Polyoxyethylene propylene glycol mono-stearate	Emulsifier	Paste	100%	Nonionic	Water soluble-general emulsifier
G-2800 2854 2855 2859	Atlas Powder Co.	Polyoxyethylene sorbitol oleate	Emulsifier	Liquid	100%	Nonionic	Oil soluble; used as vitamin oil emulsifier; "G-2800" is a polyoxypropylene mannitol dioleate
G-7076H	Atlas Powder Co.	Polyoxyethylene sorbitan dilaurate	Emulsifier	Liquid	100%	Nonionic	
G-7426N	Atlas Powder Co.	Polyoxyethylene sorbitan monopalmitate	Emulsifier	Liquid	100%	Nonionic	
G-7596J 7596P	Atlas Powder Co.	Polyoxyethylene sorbitan monolaurate	Detergent	Liquid	100%	Nonionic	
G-8916P 8916T	Atlas Powder Co.	Polyoxyethylene sorbitan esters of mixed fatty and rosin acids (tall oil)	Emulsifier	Liquid	100%	Nonionic	
G-9446N	Atlas Powder Co.	Polyoxyethylene sorbitan monooleate	Emulsifier	Liquid	100%	Nonionic	
Germ-i-tol Conc.	Fine Organics, Inc.	Dimethyl benzyl lauryl ammonium chloride	Germicide	Liquid	50%	Cationic	A sanitizer; suggested concentration, 200 PPM; also supplied in a 97-100% active solid; phenol coeff, against **S.A.** at 20°C, 300; at 37°C-407
Glim (retail and bulk)	B. T. Babbitt, Inc.		Detergent	Liquid		Anionic	A liquid dishwashing and general household detergent
Glucaterge-12 -28	Commercial Solvents, Inc.	A fatty acid condensate of N-methyl glucamine and coconut fatty acids (-12) or cottonseed fatty acids (-28)	Detergent Emulsifier	Paste	100%	Nonionic	A detergent for wool; both "12" and "28" may prove of use as an additive to soap to extend its use in hard water; in soap base cosmetics, etc.; "Glucaterge-28" useful as a non-sudsing detergent for mechanical dishwashing compounds
Gluconate, sodium salt of	Diversey Corp	As named	Sequestrant	Solid	100%	Anionic	A sequestering agent
Glycerol Monolaurate Oleate Stearate Ricinoleate, etc.	Alrose Chemical Co. Carlisle Chemical Works Glycol Products Co. Goldschmidt Chemical Co. Kessler Chemical Co., et al	As named	Emulsifier	Liquid Paste Solid	100%	Nonionic	Emulsifiers of this type also frequently occur under trade names as "Aldo 33," "Tegin 515," etc.
Glycol Esters	Carlisle Chemical Works Glyco Products Kessler Chemical Co., et al	As named	Emulsifiers	Liquid Solid Paste	100%	Nonionic	A wide range of emulsifiers occur as glycol condensates useful in agricultural sprays, cosmetics, food products, etc.
Good-rite CEA	B. F. Goodrich Chemical Co.	Carboxy ethyl amine derivative	Detergent	Powder		Amphoteric	A commercial detergent which is specifically active as a foaming ingredient and suggested for applications in the cosmetic industry
Goremul A	Glycol Products Co.	Polyhydric alcohol ether fatty acid condensate	Emulsifier Dispersant	Solid	100%	Anionic,	Wax solid; water dispersible; an emulsifier in the presence of acids, salts, etc.
Hallco CPH Series	C. P. Hall Co.	Mono- and di-esters of fatty acids	Emulsifier	Liquid Solid Paste	100%	Anionic	A wide range of emulsifiers for cosmetics, industrial etc. applications

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Hallco CPH-123	C. P. Hall Co.	Complex fatty acid derivative	Emulsifier Wetting	Liquid	100%	Nonionic	For preparation of agricultural sprays, insecticides, etc.
Hallco 9279 9309 9429	C. P. Hall Co.	Complex fatty acid condensates	Rewetting	Liquid	100%	Nonionic	Used in textile, paper and allied field
Halo (retail)	Colgate-Palmolive Co.	The ammonium salt of the sulfated monoglyceride	Detergent	Liquid		Anionic	Shampoo
Hartofol C	Hart Products Corp.	Alkyl aryl sodium sulfonate	Penetrant Emulsifier Wetting	Liquid	45%	Anionic	Viscous liquid; soluble in warm water; uses: textiles, scouring, wetting out, etc.
Hartopon B	Hart Products Corp.	Modified alcohol sulfate	Detergent	Paste		Anionic	Textile scouring agent
HT-70%	Fine Organics, Inc.	Higher alkenyl dimethyl ethyl ammonium bromide	Germicide	Solid	70%	Cationic	Composition, 70% quaternary ammonium salt and 30% sodium carbonate; use in water treatment for slime removal, etc.
Hum (retail)	Theobald Industries	A built alkyl aryl sodium sultonate	Detergent	Powder		Anionic	A household detergent of class of "Tide", "Fab", "Surf", etc.
Hyamine 10-X	Rohm & Haas Co.	Di-isobutyl cresoxy ethoxy ethyl dimethyl benzyl ammonium chloride	Germicide	Cryst.		Cationic	Disinfectant and sanitizer in restaurant and pharmaceutical fields, etc.; uses: same as for "Hyamine 1622"
Hyamine 1622	Rohm & Haas Co.	Di-isobutyl phenoxy ethoxy ethyl dimethyl benzyl ammonium chloride	Germicide	Cryst.		Cationic	Disinfectant and sanitizer in restaurant and pharmaceutical fields; other applications: pigment dispersions, oil flotation, textile treatment (where they are substantive to cellulose), anti-static agent, cationic latices; also in liquid form — 50%
Hyamine 2389	Rohm & Haas Co.	Alkylated (C_8-C_{18}) tolyl methyl trimethyl ammonium chlorides	Germicide	Liquid	50%	Cationic	Disinfectant and sanitizer in restaurant and pharmaceutical fields, etc.; uses: same as for "Hyamine 1622"
Hyamine 3104	Rohm & Haas Co.	Dimethyl di-docenyl ammonium chloride	Germicide	Liquid	70%	Cationic	70% (aqueous) and 60% (isopropanol); uses: same as for "Hyamine 1622"
Hydroterg-B	Hydrocarbon Chemicals, Inc.	A fatty alkanolamide	Detergent Wetting	Liquid	100%	Nonionic	Useful as a detergent in shampoos, shaving creams, hand cleansers
Hydroterg-C	Hydrocarbon Chemicals, Inc.	A built alkyl aryl sulfonate with nonionic additives	Detergent	Liquid	60%	Anionic	All purpose detergent for industrial cleaning
Hymolon K	Hart Products Corp.	Fatty acid amine condensate	Detergent Emulsifier	Liquid	100%	Nonionic	Textile, wool scouring agent
Hyonic	Nopco Chemical Co.	Alkyl polyoxyethylene alcohol	Detergent Wetting	Liquid	75%	Nonionic	Wool, cotton and hard surface detergent; wetting agent
Hyonic FA 20 FA 40	Nopco Chemical Co.	Fatty alkylolamide	Detergent	Liquid	100%	Nonionic	Detergent base; low viscosity-dilution curve; excellent with alkaline builders; "FA - 40" gives high viscosity 10 to 25% solutions; very good foam with alkaline builders
Hyonic FA 75	Nopco Chemical Co.	Modified fatty alkylolamide	Detergent	Liquid	70%	Anionic	Detergent with great solubility in salt and builder solutions; excellent foam, hard water resistance, and gives low viscosity-dilution curve
Hyonic FS	Nopco Chemical Co.	Lauric acid alkylolamide	Foam Stabilizer	Liquid	100%	Nonionic	A clear liquid foam stabilizer and detergent synergist for liquid blends
Hyonic PE 225	Nopco Chemical Co.	Polyoxyethylene ester	Detergent	Liquid	100%	Nonionic	Low foaming detergent for textiles and automatic laundry formulation
Hyonic PE 250	Nopco Chemical Co.	Alkyl aryl polyether alcohol	Detergent Wetting	Liquid	100%	Nonionic	Detergent for fibrous and hard surface materials; excellent wetting, emulsifying power and calcium resistance

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Hyonic PE 275	Nopco Chemical Co.	Modified alkyl aryl polyether alcohol	Detergent	Liquid	100%	Nonionic	Excellent detergent for all textile fibers; non-corrosive to containers or machinery
Hyponate L-50	Nopco Chemical Co.	Petroleum sulfonate of mol. wt. 415/430	Wetting Emulsifier	Liquid	62%	Anionic	Designed for use as an emulsifier for synthetic rubber and resins and as a fat splitting agent where free oil would produce an undesirable unsaponifiable
Hytergen BM	Hart Products Corp.	Modified alcohol sulfate	Detergent Wetting Emulsifier	Paste	20%	Anionic	Textile; scouring agent; soaping off prints, etc.
Hytergen GL #10	Hart Products Corp.	Sulfated fatty amide	Detergent Wetting	Liquid		Anionic	A water soluble salt free general scouring agent
Hytergen MV	Hart Products Corp.	Sulfated fatty acid amide	Detergent	Powder		Anionic	Water soluble; textile; for print, rayon and cotton scouring
Idonyx	Onyx Oil & Chemical Co.	An iodophor	Germicide	Powder		Nonionic	A product sold to manufacturers only for compounding detergent sanitizers
Igepal CA-630 CA-710	Antara Chemicals, a sales division of General Aniline & Film Corp.	Iso-octyl phenoxy polyoxyethylene ethanol	Detergent Wetting Emulsifier Dispersant	Liquid	100%	Nonionic	Surfactant for general use as detergent, etc. in textile, leather, and paper trades; soluble in water, aromatic petroleum solvents, ethylene glycol; insoluble in kerosene, "Igepal CA-710" similar to "Igepal CA-630" but has higher solubility at elevated temperatures
Igepal CO-430 530 610 630 710 730 850 880	Antara Chemicals, a sales division of General Aniline & Film Corp.	Nonyl phenoxy polyoxyethylene ethanol	Detergent Wetting Emulsifier Dispersant	Liquid	100%	Nonionic	A versatile series of surfactants produced by the reaction of nonyl phenol with ethylene oxide. The higher numbered "Igepals" are more water soluble while the lower numbered products are more oil soluble. Uses: agricultural formulations, compounding, cosmetics, dairy, leather, metals, paper, and many other industries. "Igepal CO-850" and "880" are wax
Igepal CO-633	Antara Chemicals, a sales division of General Aniline & Film Corp.	Nonyl phenoxy polyoxyethylene ethanol	Detergent Wetting Dispersant	Liquid	33%	Nonionic	A 33% aqueous solution of "Igepal CO-630"
Igepal DM-710	Antara Chemicals, a sales division of General Aniline & Film Corp.	Higher alkyl phenoxy polyoxyethylene ethanol	Detergent Emulsifier Dispersant	Liquid	100%	Nonionic	Emulsifier in agricultural formulations; textile scouring and anti-static agent for synthetic fibers; etc.
Igepon AC-78	Antara Chemicals, a sales division of General Aniline & Film Corp.	Coconut acid ester of sodium isethionate	Detergent Dispersant Foaming Wetting	Powder	85%	Anionic	Good foaming and lathering properties; used in cosmetics industry, in dentifrices, in shampoos; fine fabric detergent
Igepon AP-75 AP-78	Antara Chemicals, a sales division of General Aniline & Film Corp.	Oleic acid ester of sodium isethionate	Detergent Dispersant Wetting	Powder	51%	Anionic	Less concentrated form of "Igepon AP-78"; used as a textile detergent; "Igepon AP-78" is 85%. Wetting and dispersing agent in insecticide and herbicide wettable powders; detergent base for household and industrial cleaners
Igepon CN-42	Antara Chemicals, a sales division of General Aniline & Film Corp.	Sodium N-cyclohexyl-N-palmitoyl taurate	Detergent Dispersant Wetting	Paste	20%	Anionic	Low foaming detergent for formulating mechanical dishwashing and industrial cleaners
Igepon T-33 T-43 T-51 T-73 T-77	Antara Chemicals, a sales division of General Aniline & Film Corp.	Sodium N-methyl-N-oleoyl taurate	Detergent Wetting Dispersant Emulsifier Foaming	Liquid Slurry Gel Powder Flake	32% 33% 1 % 28% 67%	Anionic	The "Igepon T" brands are used in many industries-agriculture, cotton processing, cosmetics, detergent formulating, leather, etc. "T-77" is of value as a wetting and dispersing agent for agricultural wettable powders.
Igepon TC-42	Antara Chemicals, a sales division of General Aniline & Film Corp.	Sodium N-methyl-N-"coconut oil acid" taurate	Detergent Foaming Dispersant	Liquid	22%	Anionic	Detergent base, foam booster, or solubilizing agent in packaged detergents, shampoos, and dentifrices

(To be Continued)

Nopco announces...

THE HYONICS

3 Series of Detergents that give almost any property desired by makers of household and industrial detergents

No "trimmings" to this ad. We simply want to give you as much information as we can put on one page, about what these versatile new Nopco products can do for your detergents.

The Hyonic PE Series is a group of 100% active, nonionic, ethylene condensates. Among the uses of PE 225 are: automatic laundry and dishwashing detergents, car wash powders, wall and floor cleaners. Typical uses of PE 250: in dairy detergent powders, antiseptic sanitizing detergents, dairy milkstone removers. PE 275 may be used in: light duty liquid detergents, pot and pan degreasers, dry cleaning solvent cleaners.

The Hyonic FA Series is a group of alkylolamide derivatives. Of these, FA 20 and FA 40 are 100% active; FA 75 is 70% active. FA 20 is used in dairy cleaners, household degreasers, wax emulsions, among others. FA 40 is useful in floor cleaners, liquid steam cleaners, bottle washing compounds, rug shampoos. FA 75 is ideal for window cleaners, bar glass cleaners, liquid scouring concentrates.

Hyonic FS, a 100% active lauric acid alkylolamide condensate, is recommended as a foam stabilizing additive and detergent synergist. Being a liquid, not a paste, it permits easy addition to liquid and spray-dried formulations. It is used chiefly in shampoos, bubble baths, cosmetics, and some dishwashing detergents.

Partial List of Properties of Hyonics PE, FA, FS

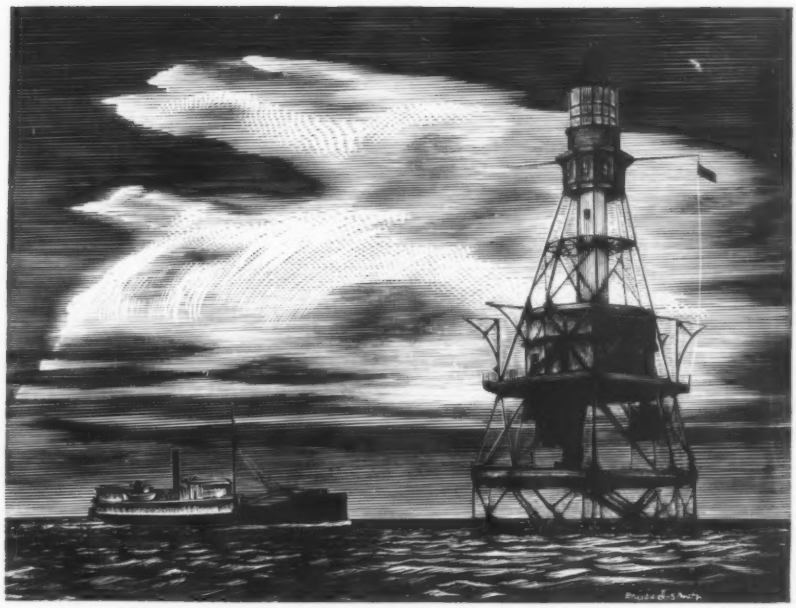
	PE 225	PE 250	PE 275	FA 20	FA 40	FA 75	FS
Soluble in wide variety of organic solvents and electrolytic solutions	✓					✓	
Excellent detergency on fabrics			✓	✓			
High thickening action					✓		✓
Outstanding detergency with phosphate builders					✓	✓	
High detergency over wide ranges of pH		✓					
High detergency over wide ranges of temperature	✓						
Not inactivated by metallic salts	✓						
Compatible with soaps, anionics, cationics	✓						
High foaming		✓	✓	✓	✓	✓	✓
Low foaming	✓						
Effective with alkaline builders	✓		✓	✓			
High detergency over wide ranges of water hardness		✓					
Non-corrosive to iron and steel			✓		✓		
Good wetting agent				✓	✓	✓	✓
Low viscosity curve			✓	✓		✓	
Stable in presence of acids, alkalies, inorganic salts		✓					
Foam Stabilization							✓

In this fast-growing, competitive field of detergents, Nopco's technical men will work with you to the fullest. Write for full information today. Nopco Chemical Company, 706 Industrial St., Harrison, N. J.

NOPCO

PLANTS: Harrison, N. J.
Cedartown, Ga. • Richmond, Calif.
London, Ont. Canada

FAMOUS LIGHTHOUSES OF AMERICA



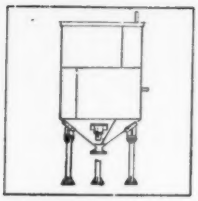
FOWEY ROCKS LIGHTHOUSE is situated on the outer reefs 11 miles southeast of Miami, Florida. Built in 1878, it is of iron pile construction and stands in 4 feet of water with the light itself 110 feet above water. Fowey Rocks Lighthouse is one of a series of great offshore lighthouses that have made navigation safer and helped to eliminate an infamous wrecking industry that once thrived along the dangerous Florida Reefs.

Greater Safety and true guidance in the use of electrochemical products have always been important factors in the service Niagara Alkali Company offers to its customers. You can always depend on the quality of Nialk® Liquid Chlorine, Nialk Caustic Potash, Nialk Carbonate of Potash, Nialk Paradichlorobenzene, Nialk Caustic Soda, Nialk TRICHLORethylene, Niagathal® (Tetrachloro Phthalic Anhydride).

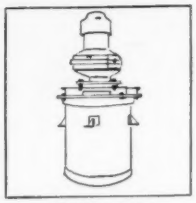
NIAGARA ALKALI COMPANY

60 East 42nd Street

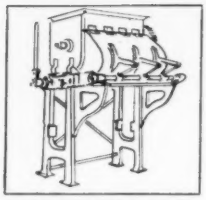
New York 17, N.Y.



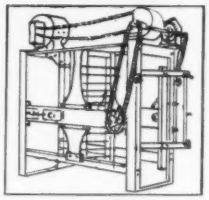
KETTLES



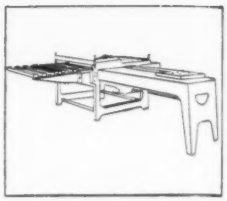
CRUTCHERS



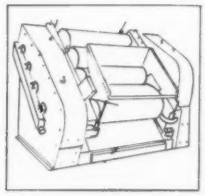
AMALGAMATORS



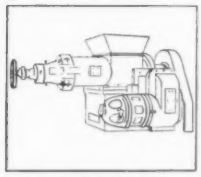
SLABBERS



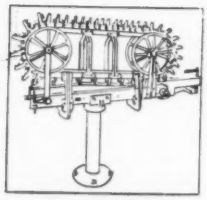
LAUNDRY SOAP CUTTERS



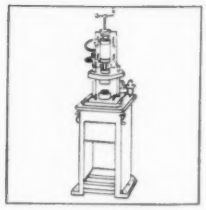
MILLS



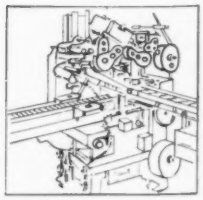
PLODDERS



TOILET SOAP CUTTERS

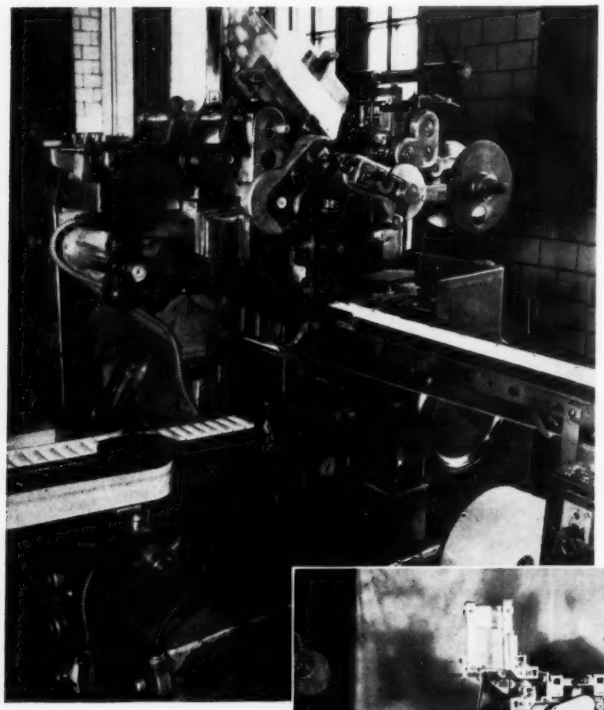


PRESSES

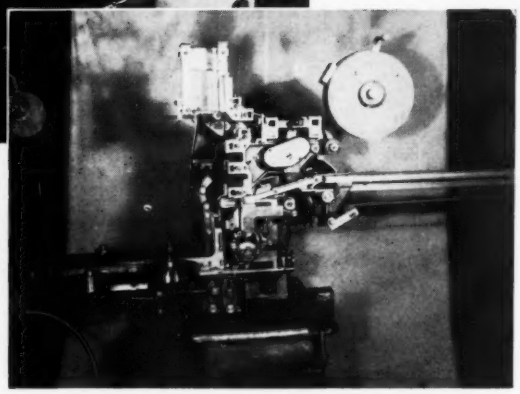


WRAPPERS

High Speed WRAPPING MACHINES for Toilet, Bath and Hotel Sized SOAP



MODEL S wraps toilet and bath sizes up to 200 per minute on cakes suitable for high speed wrapping. Sheet or roll feeds.



MODEL MS wraps up to 300 cakes per minute of hotel sized miniatures. Sheet or roll feeds.

VAN BUREN Cutting and Wrapping Machines are widely used by leading Soap Manufacturers throughout the world. Many of these very efficient machines are operating "around the clock—three shifts per day," cleanly cutting without scrap, thence automatically feeding to the presses, and to the wrappers at varying speeds up to 300 cakes per minute, according to sizes desired.

HOUCHIN builds all the kindred machinery needed for completely automatic, continuous or intermittent, soap production.

Send for descriptive literature of this Soap Cutting and Wrapping Machinery and other Houchin Soap Making Equipment.

HOUCHIN MACHINERY CO., INC.

HAWTHORNE, NEW JERSEY, U. S. A.

Manufacturers of Soap Making Machinery for over a Century

Cutting Rail Shipment Damage

Kelite reduces "damage in transit" to packages of its detergents and cleaners on long rail hauls by using new dunnage-free locking equipment

THE problem of "damage in transit" to products shipped in packages ranging from fiber and steel drums, down through carboys, crates and cartons, is one experienced by manufacturers shipping goods by rail to various sections of North and Central America. Generally, the greater the distance the goods are shipped, whether to branch plants or to ultimate consumers, the greater the risk of damage to the packages.

Like many manufacturers, Kelite Products, Inc., Los Angeles, had encountered the "damage in transit" problem in shipping its products for industrial cleaning operations. These products cover a wide range of uses and include detergents, special metal finishing cleaners and even steam cleaning equipment. Much of what Kelite manufactures in its plants in Berkeley Heights, N. J., Chicago, Dallas, Mexico City and Los Angeles is in liquid and powder or granulated form. Its products are shipped in fiber and steel drums, carboys, crates and cartons.

In his job as manager of traffic and purchasing, A. M. Russo of Kelite's Los Angeles plant has to see that shipments not only leave the plant in good condition but arrive at their destination undamaged and uncontaminated. Previously the firm, like many others, found that consignments arrived incomplete; customer good will was jeopardized; delays occurred in replacing damaged shipments and additional burdens were imposed on the Kelite staff in filing damage claims.

To overcome these problems, Mr. Russo began using for his Eastbound shipments box cars equipped with the Evans "DF Loader," the damage-free, dunnage-free locking equipment designed and installed in new or existing box cars by Evans Products Co., Plymouth, Mich. Box cars of 39 Class I railroads are now equipped with the permanent, built-in "DF Loader."

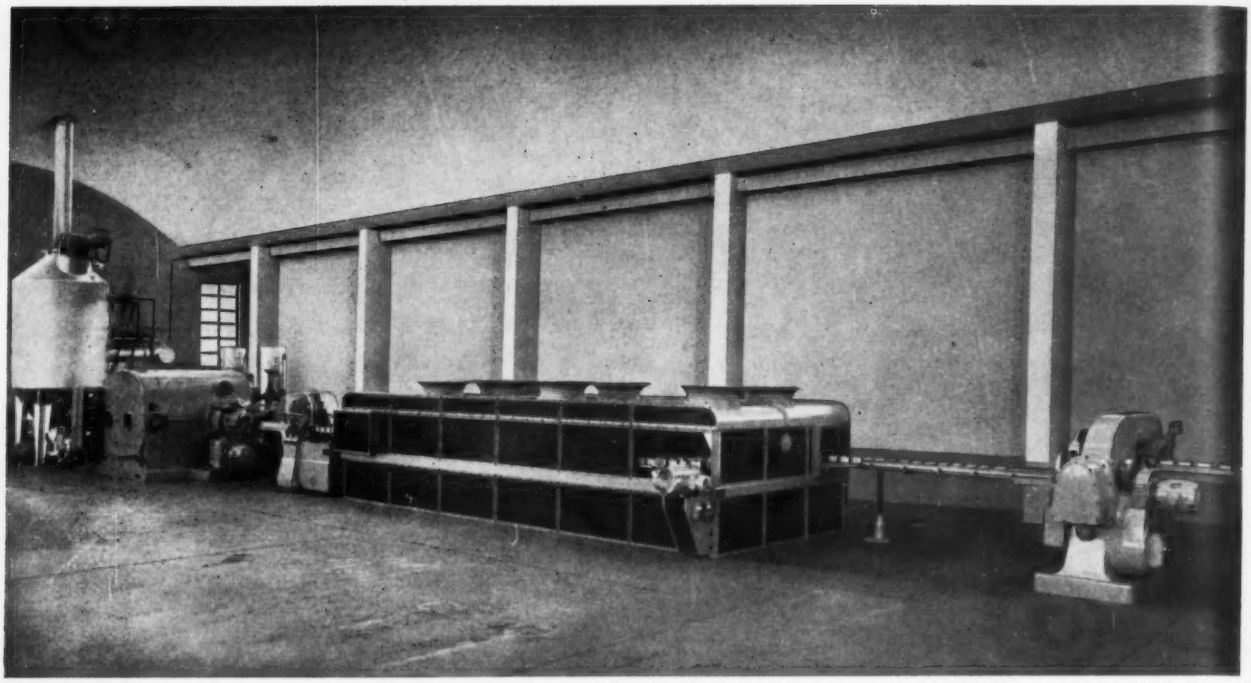
The "DF Loader" works like this: Perforated wall belt rails, welded to car bay posts, admit a pair of spring locking steel fingers attached to each end of a wood and steel cross member. These cross members can be moved backward or forward at will at increments of one inch along any two parallel wall belt

In building loads, Mr. Russo's loading crew positions heavy drums on the car floor (left). Deckboards separate bottom row of drums from those above and prevent drums from resting directly on one another.

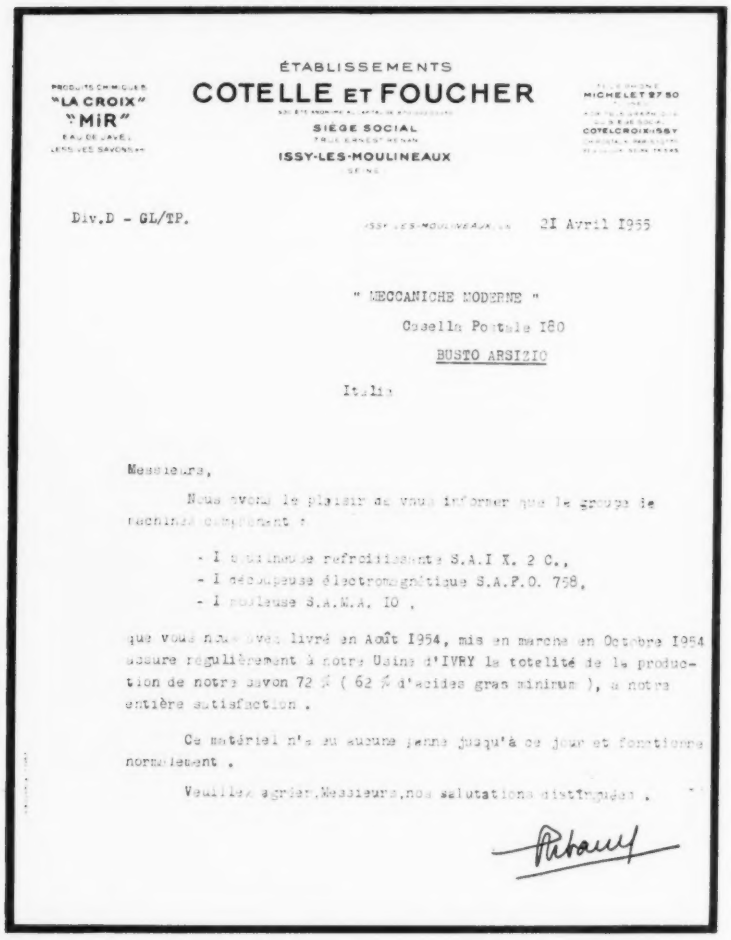
Right: rear portion of load at this end of the car is held in position with "DF Loader" cross member. Deckboards are frequently used as bulkheads, placed against load before cross members are locked into place.

MECCANICHE MODERNE

CORSO SEMPIONE, 51 — BUSTO ARSIZIO (ITALY)



A Fully automatic and continuous type "PISONI SAIX" plant manufacturing 2 tons per hour of plodded laundry soap.



ÉTABLISSEMENTS
COTELLE ET FOUCHER
SIÈGE SOCIAL
ISSY-LES-MOULINEAUX

Div.D - GL/TP. — 21 Avril 1955

" MECCANICHE MODERNE "
Casella Postale 180
BUSTO ARSIZIO
Italie

Messieurs,

Nous avons le plaisir de vous informer que le groupe de machines comprenant :

- 1 plodderuse refroidissante S.A.I X. 2 C.,
- 1 découpeuse électromagnétique S.A.P.O. 758,
- 1 mouleuse S.A.M.A. IO ,

que vous nous avez livré en Août 1954, mis en marche en Octobre 1954 assure régulièrement à notre Usine d'IVRY la totalité de la production de notre savon 72 % (62 % d'acides gras minimum), à notre entière satisfaction .

Ce matériel n'a eu aucune panne jusqu'à ce jour et fonctionne normalement .

Veuillez agréer, Messieurs, nos salutations distinguées .

NOTE: The output may be increased up to 3 tons per hour if sufficiently cold water is available and a "Marseille" type of soap, guaranteed pure with 62/63% T.F.A. content, is being manufactured.

CHARACTERISTICS

- **It is the only plant on the market cooling soap with simultaneous forming of a continuous bar, maintaining unchanged total fatty acids contents of liquid soap.**
- **Our SAIX plodder is the only plodder on the world market which, working without any endless screw, can plod soaps made with fats having a high or *low* melting point, even if containing high percentages of water or builders, namely:**
  —pure soaps having 62-63% F.T.A.;
  —soaps having T.F.A. contents from 35% up to 62-63%;
  —dry, pure or filled soaps having T.F.A. contents from 35% up to 70-72%;
  —transparent dry laundry soaps having 70-72% T.F.A.;
  —transparent toilet soaps having 70-72% T.F.A.
- ***Savings:* steam 100%—labor 70%—water 50%—power 50%**
  A fully automatic and continuous operation starting from liquid soap to stamped finished cakes ready for packing.
- **Only one workman to run the plant — small space requirements — absolutely no scraps.**
- **Soap perfumation automatically done by means of a volumetric proportioning pump.**
- **Highly increased foaming capacity — cakes undergo no deformation during storage.**
- **Less moistening of the packed highly water filled cakes.**
- **These plants are manufactured for the following output capacities: 0.5 — 1 — 2 — 3 tons per hour.**
- **We also manufacture:**
  Complete plants for making toilet soaps and chips (cooling rollers — drying equipment — silos — weighing machines — mixing machines — milling machines — normal and vacuum plodders having one, two or three endless screws — cutting machines and stamping machines).
- **Complete plants for soap powders and granules or synthetic detergent beads (continuous sulphonating equipment, spray drying equipment).**
  Thirty years' experience in making soap machines.
  ***Free and without obligation:* tenders — references — plant inspections and soap samples.**

Left: fiber drums are loaded from rear car wall forward and are stacked two and three high before being bulkheaded off and load sections locked in place with the cross members

Because part of Kelite's loads are composed of relatively light-weight drums (right), they can be multi-tiered and a section of the lading can run from floor up more than two-thirds of the way to the car roof. One bulkhead is superimposed above the other to make an unbroken barrier from floor to top level of the load; both are locked in place.

rails. The belt rails are positioned from car floor to roof at intervals of roughly 18 inches to provide for the wide variety of loads usually shipped in box cars. Each car is equipped with from 40 to 50 cross members and a complement of deckboards that can be used as bulkheads.

When loading a "DF Loader"-equipped car, Mr. Russo breaks up his lading into several sections, each firmly locked and independent of all others in the car. Starting with a row of heavier lading—steel drums, for instance—from one end of the car, the Kelite loading crew builds the floor level load out the desired distance (which may vary depending on the kind and destination of load). Then deckboards are put over the tops of the bottom layer of drums and lighter fiber drums are loaded atop the steel drums. Three and sometimes four layers of drums are loaded in this way, each layer insulated from the other by deckboards.

When a section of the load is completed, the deckboards are upended and used as bulkheads. Three or more cross members are locked securely against the bulkheaded load section and it is ready for transit. When one section is completed, the next is built. In most cases, the load is built through the center doorway area of the car to get maximum use of car space. Doorway belt rails, perforated like those along car walls, can be moved up or down to provide unbroken lines of perforated belting from one end of the car to the other and cross members can be locked into them to brace portions of the load that may extend through the center area of the car.

In some kinds of loads, DF cross members can be used as supports for second deck lading. In this case, where it is desirable to keep upper tier lading completely away from the floor load, deck boards are used as flooring over the cross members. The second tier is secured ex-

Picture below illustrates how "DF Loader" deckboards and cross members are used to separate load from end of car toward center doorway. Smaller drums on center level will be locked firmly in place when that portion of the load is completed.

New Enchantment

for your

Perfumes

Cosmetics

Soaps . . .

Let us help you with the
UNUSUAL
in NATURAL and AROMATIC
MATERIALS

We are exclusive representatives for
TOMBAREL FRERES, Grasse
Established 1837

• Absolute Supreme Flower Essences •
Surfine Essential Oils • Resinoids

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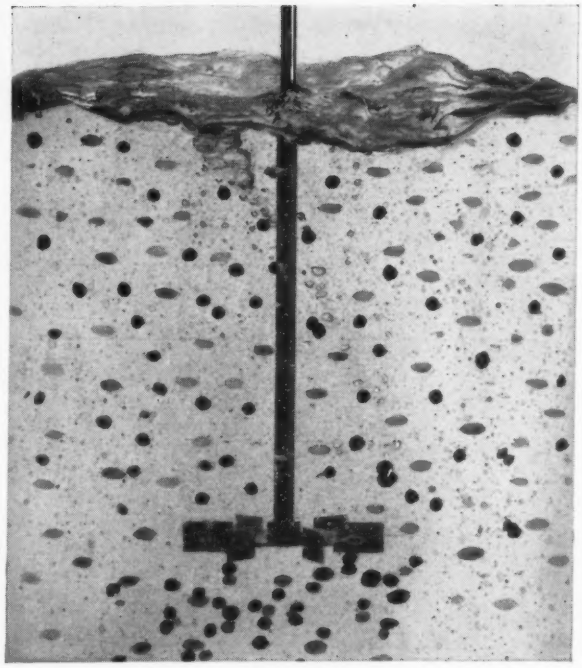
IN CHICAGO: A. C. DRURY & CO. INC.
219 EAST NORTH WATER STREET



How to get fluid mixing that keeps you competitive

You can mix fluids by "rule-of-thumb," and get poor-to-passable results.

Or you can mix by a scientific method that *guarantees* you the exact results you want—in minimum time, with minimum horsepower.

Which kind of mixing will you rely on, to meet today's competition—and tomorrow's?

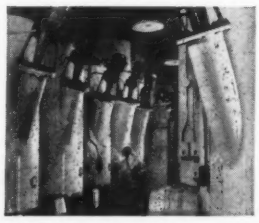
If you're like thousands of LIGHTNIN Mixer users, you'll go for the scientific no-risk way.

MAKE ANY OPEN TANK an efficient mixing vessel, by adding a LIGHTNIN Portable Mixer. Powerful double mixing action tumbles and rotates the batch for thorough, rapid blending, stirring, dissolving, suspension of solids. Thirty models, ⅛ to 3 HP. *Send for Catalog B-108.*

This guarantee protects you

A background of nearly 30 years of specialization in fluid mixing goes to work for you when you choose to mix with LIGHTNINS. You know, in advance, what your mixing results will be. Every LIGHTNIN Mixer you buy is guaranteed, unconditionally, to do the job you want it to do.

It costs no more (usually much, much less) to mix fluids the LIGHTNIN way. But prove it for yourself: On most mixing operations, you can get a guaranteed recommendation and firm price from your LIGHTNIN Mixer representative—*by phone*, without waiting. Why not look him up in your office copy of Thomas' Register, and call him today?



USING SPECIAL TANKS? You can get LIGHTNIN Mixers to fit them. Propeller-type LIGHTNINs like these come in sizes from ¼ to 3 HP, for open or closed tanks. *Send for Catalog B-103.* And for larger mixing jobs, choose LIGHTNIN turbine or paddle mixers, in sizes from 1 to 500 HP. *Fully described in Catalog B-102.*

Lightnin® Mixers™
MIXING EQUIPMENT Co., Inc.
167-h Mt. Read Blvd., Rochester 11, N.Y.
In Canada: Greey Mixing Equipment, Ltd., 100 Miranda Ave., Toronto 10, Ont.

actly like that on the floor and thus maximum use can be made of available box car space, both on the floor and from floor upward toward the roof.

"We have been loading from 40,000 to 80,000 pounds in the "DF cars," Mr. Russo explains. "In addition to eliminating virtually all of our damage claims, these cars, which the railroads have been providing for us when they can, also eliminate the need for any special dunnage. Formerly when we shipped in ordinary box cars we'd have to spend from $30 to $60 for dunnage in each car. That didn't include the cost of labor required to build the dunnage. To make matters worse, the conventional wood dunnage frequently failed and our cars arrived at the other end of the line with damaged loads.

"We sent the second "DF" car we ever used to our Berkeley Heights plant in New Jersey. Our plant there told us, 'This is the kind of car we've been looking for. Ship all future shipments in these cars if you can.'

"I like the cars because they permit me to double deck my loads at no extra cost and because they have helped me cut down my loading time. I don't doubt that unloading time can be reduced, too. There's no question that the 'DF' cars have helped shippers put more weight in their cars, making better use of available cars. This saving has enabled some of the rail carriers to lower their freight rates and still gives them more revenue per ton mile tan hthey can get in the conventional box car."

A. M. Russo (above), Kelite traffic manager, has found "DF Loader" equipped cars the answer to damage-free shipments of Kelite products to eastern distribution points.

—— ★ ——

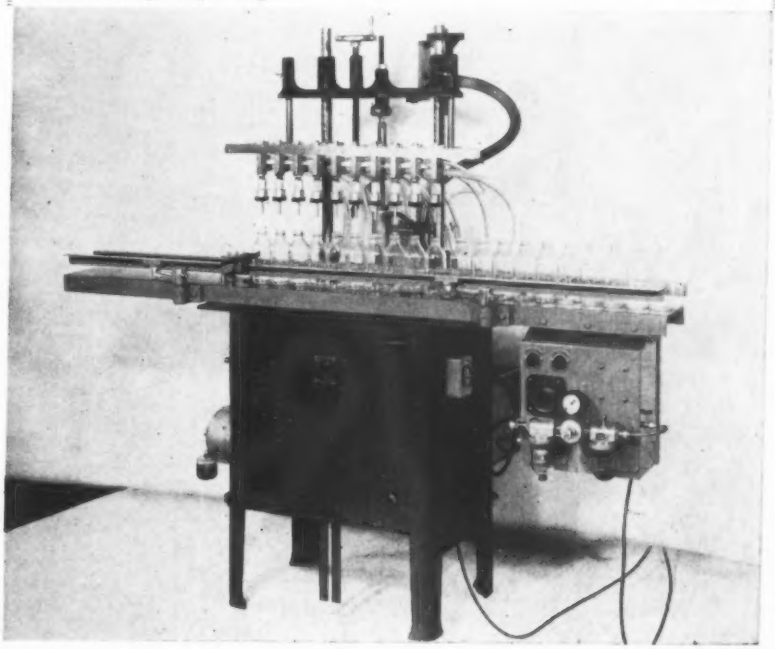
New Bottle Filler

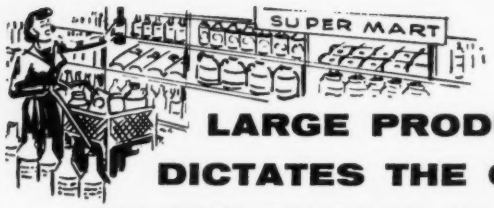
The production of a new semi-automatic bottle filling machine equipped with an electro-pneumatic auto-timer was announced recently by Perl Machine Mfg. Co., Brooklyn. The machine operates by pressing a button. Filling valves are automatically lowered into the bottles, which are filled to pre-set levels of extreme accuracy. The valves are then lifted, ready to lower into the next group of bottles to be filled. Unskilled operators can attain full production immediately without danger of overflow and with uniformity of filling levels, the maker claims.

The Perl auto-timer is now being made available for use and installation on any make straight line bottle filling machine.

Shown in the accompanying illustration is Model COS-X. It is

New Perl Machine Mfg. Co. Model COS-X semi-automatic bottle filling machine equipped with electro-pneumatic auto-timer. It operates by either vacuum or gravity filling.



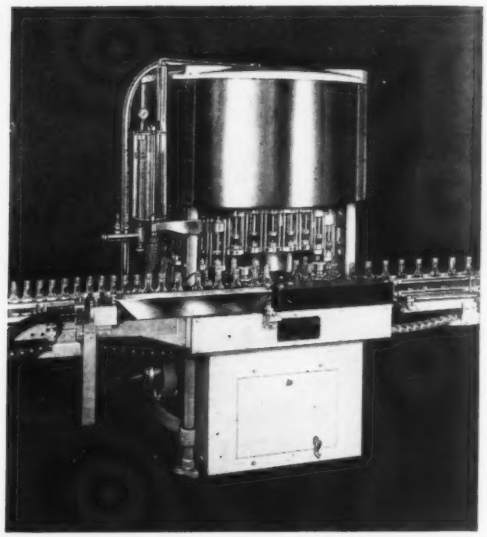


LARGE PRODUCTION DICTATES THE CHOICE OF THE FILLING MACHINE

For filling liquids to meet large-volume, low mark-up merchandising requirements, U.S. Rotary Vacuum Fillers are meriting first choice by the packagers of national brands.

It will pay you to learn what two generations of liquid filling engineering experience can contribute to your operation. Learn, too, how U.S. automatic liquid filling equipment can be custom-engineered to your requirements, at a substantial end saving over a standard machine.

For recommendations or quotations, please specify product, size and type of container and desired fill per minute, hour or day. For details of the machine, write for Rotary Filler Bulletin.



U. S. BOTTLERS MACHINERY CO.

Specialists in Liquid Filling and Container Cleaning Equipment

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U. S. Model B-49 Straight-line Vacuum Filler; the most automatic one-man filler. Operates with or without discharge conveyor. For all types of liquids. Easy changeover for all types of containers. For full details, write for the Model No. B-49 Bulletin.

U. S. Model B-2 Semi-automatic Vacuum Filler. Provides efficient continuous production, filling two containers at a time. Automatic product supply for all containers up to 4½" dia. All liquids and semi-liquids. Portable. Write for the B-2 Bulletin.

U. S. Siphon Filler. Efficient for all liquids including foamy products or products that do not permit agitation. Stainless steel tubes; acid resistant glass lined tank. Improved model. Adjustable, simple, accurate, dependable. Write for the Siphon Bulletin.

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All Over The World

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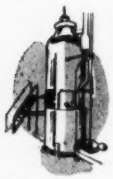
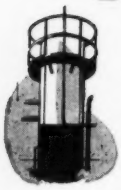
Glycerine — Fatty Acids — Edible Oils





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- **Consulting service to aid in solving your operating, process or equipment problems.**
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FILTREX Solvent Extraction—world's most versatile direct solvent extraction process for oils.

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Oil Refining—for production of highest quality cooking and salad oils.

Glycerine Recovery and Refining—W&S equipment is the choice of large and small producers for efficiency of recovery.

Margarine, Shortening, Vanaspati—and other process plants are offered.

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POTDEVIN

Label Paster

Time savings of 30% and more with unskilled operators makes your POTDEVIN Label Paster quickly pay for itself. No adjustments required for varied shaped labels. Accurate control of adhesive minimizes waste and assures clean, neat labeling.

Available in 6", 8½", 12" and 18" widths.

ESTABLISHED IN 1893 POTDEVIN

POTDEVIN MACHINE CO.

256 North Street • Teterboro, N. J.

Designers and manufacturers of equipment for Bag Making, Printing, Coating, Laminating, Gluing and Labeling

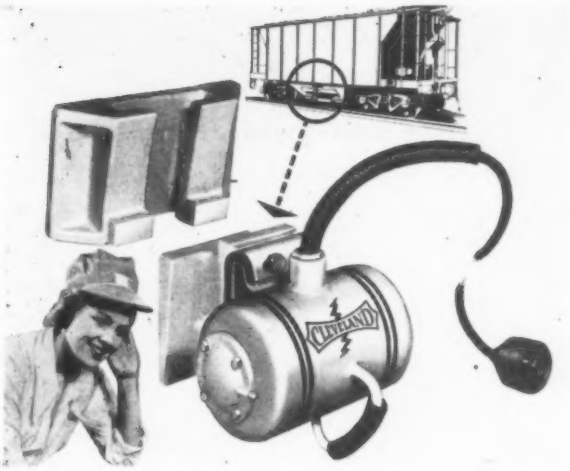
a semi-automatic machine equipped with the electro-pneumatic autotimer, and operates by vacuum or gravity filling. It fills 20 to 100 bottles a minute, depending on size, and handles capacities up to five gallons.

★

New Portable Vibrator

A new portable electric vibrator designed "RC-30-LSRR" and intended to speed the unloading of hoppered railroad cars was introduced recently by Cleveland Vibrator Co., Cleveland, O. The unit employs the rotary weight shaft principle but is self-contained with no pulleys or belting, and sealed from moisture and dust by an enclosed housing. Available in a choice of voltages ranging from 110 to 550, the vibrator has a working frequency of 3600 impulses per minute corresponding to 60 cycles per second.

The unit is supplied ready to install with a 10-foot cord, watertight disconnect plug with combination circuit breaker, and manually operated switch. It weighs 89 pounds and can be adapted for use on bins, hoppers, chutes, etc.



New, portable electric vibrator for speeding up the unloading of railroad freight cars was introduced recently by Cleveland Vibrator Co., Cleveland.

★

Odor Definition Proposal

A new proposal for odor classification is based on behavior of different odorants toward different adsorbents. Only a small number of odorants has as yet been examined, but so far it appears that their individual adsorption characteristics are unique. Furthermore, substances of similar odors show similar adsorption properties, whereas substances with very unlike odors also have dissimilar adsorption characteristics. Experimental results are given for activated carbon, silica gel, activated alumina, and fuller's earth, all of which are suitable for the purpose. Pumice and vegetable fat were found unsuitable. Activated carbon is made in so many different grades, varying in pore size, pore volume, and degree of oxidation, that it may be possible to arrange an odor discriminatory system with varieties of activated carbon alone.

The assumption is presented that there are several kinds of receptors in our olfactory receptor system, that they will have different adsorbent powers towards different odorants, and that these differences will account for those differences in quality of odor that we observe.

The main advantages claimed for this approach to the problem of odor definition are: 1. It may be possible to characterize an odor by a set of numbers which have a real physical significance. 2. The system may throw light by analogy on the mechanism of olfactory stimulation. ("Quality Definition of Smell" by R. W. Moncrieff, *Manufacturing Chemist*, May, 1955, p. 203.)

★

"Penn-Drake" Brochure

"Penn-Drake" white oils, petrolatums and odorless solvents are described in a four-page brochure published recently by Pennsylvania Refining Co., Butler, Pa. Suggested as a base for insecticidal contact and space sprays "Penn-Drake 2251" oil is claimed to exceed the minimum requirements of the Chemical Specialties Manufacturers Assn. "Penn-Drake Super Sol," claimed to be stain-free and practically odorless, has a high flash point. It is suggested as a base oil carrier in manufacture of mothicides and DDT residual sprays and for use in home dry cleaners and metal parts cleaners. Copies of bulletin 555 are available from the manufacturer.

Drake in Crown Can Post

Crown Cork & Seal Co., Can Division, Philadelphia, recently announced the appointment of Robert Drake as assistant to N. D. Grasty, advertising manager of Crown Cork & Seal. He has been assigned to the can division in charge of advertising and sales promotion.

★

New Vibrator List

Cleveland Vibrator Co., Cleveland, released last month a new catalog describing its complete line of equipment. On eight illustrated pages the firm's eccentric-weighted shaft type vibrators, pulsating electro-magnetic type vibrators, vibrating tables, and pneumatic vibrators are covered. Specifications, prices, and information on mounting and installing the equipment are supplied. Catalog No. 11 is available from Cleveland Vibrator Co., 2828 Clinton Avenue, Cleveland 13, Ohio.

★

New PE Plant for Hercules

Hercules Powder Co., Wilmington, Del., recently announced plans to start construction of a new $6,000,000 pentaerythritol plant at Louisiana, Mo. Completion of the plant, scheduled for late next year, will make Hercules the world's largest producer of PE with an output of 24 million pounds added to an equal production by the firm's PE plant at Mansfield, Mass.

A message to SOAP INDUSTRY MANAGEMENT

Here's how you can use

STRATEGIC PURCHASING

to help your company maintain a sound competitive position

As profit margins tighten, your purchasing strategy becomes a vital force for success.

The way you purchase heavy chemicals, for instance, can influence your company's profits in the years ahead.

So it becomes increasingly important for you to seek every possible economic advantage when you select a chemical supplier.

Here, for example, are a few things to look for, when deciding on a source for caustic soda and other chemicals:

1. Supply security. How flexible are your supply lines? For instance, a supplier with plants located on deep water may be able to offer you a choice of rail or water delivery. This can insure you steady supply, in case of rail service interruption.

2. Engineering help. A supplier's engineering staff can often be valuable to you when you are setting up a new chemical process or caustic handling system—not only with advice, but with actual design assistance.

3. Smooth processing. You'll find it helpful to work with the supplier's technical service men who visit you periodically. Often these men can spot potential problems and ward them off before they cause you trouble.

4. Safety programs. Your men can benefit from safety suggestions offered by your supplier. You should have on tap the latest in safety equipment, plus up-to-date information on safe handling of chemicals.

5. Economy. Choose a supplier who wants to help you cut your operating costs; who will go all the way with you in arriving at the best, most advantageous method of shipping and handling for your conditions.

6. Experience. Above all, choose a supplier who is familiar with your industry. It takes years of experience to acquire an understanding of the problems you face, and the know-how to help you solve them quickly and economically.

Are you getting your fair share of these strategic purchasing advantages?

Many of our customers in the soap industry feel that they get these advantages in buying from Hooker, a supplier of basic chemical materials to industry for fifty years.

In the light of the growing importance of these factors, isn't this a good time to review your policies on sources of chemical supply?

5-699

HOOKER CHEMICALS

1905—Half a Century of Chemicals
From the Salt of the Earth—1955

HOOKER ELECTROCHEMICAL COMPANY

Buffalo Avenue & Union Street, Niagara Falls, N. Y.

NIAGARA FALLS • TACOMA • MONTAGUE, MICH. • NEW YORK • CHICAGO • LOS ANGELES

Products and PROCESSES

Lime Soap Dispersant

Washing fountains in industrial plants and public washrooms can be kept free of scum and grease by the use of a liquid soap formulation incorporating "Tergitol nonionic NPX." An addition of three to five percent of the nonionic to a conventional 30 to 40 percent liquid potash soap disperses "lime soap" curd and scum and solubilizes grease, says *Chemical Progress*, house organ of Carbide and Carbon Chemicals Co., New York.

— ★ —

Detergent-Sterilizer

A quaternary ammonium compound, an alkaline silicate containing detergent, and sufficient alkali hydroxide to maintain the quaternary in solution are combined to make a sterilizing detergent.

One example calls for 70 percent sodium carbonate, 20 percent sodium metasilicate, eight percent trisodium phosphate, and two percent dioctyldimethyl ammonium bromide.

Another suggested formula includes: 10 percent caustic soda, 53 percent sodium carbonate, 30 percent sodium metasilicate, five percent sodium hexametaphosphate, and two percent dioctyldimethyl ammonium bromide. British patent 669,506, J.C.L. Resuggan and Industrial and Commercial Detergents, Ltd.

— ★ —

Glycerine Periodate Method

A German method for the determination of glycerine uses less periodate but is less accurate than the periodate method accepted as standard by the American Oil Chemists Society.

Other variations of the German test include a rapid iodometric test for use in the plant reported to have a titrimetric accuracy of 0.5 percent compared with OACS accuracy of 0.05 percent. A chronological table of the usual methods runs: permanganate, 1885; bichromate, 1889/1914; distillation, 1893/1920; isopropyl iodine, 1902; hydroxyl number, 1902/1933; extraction, 1905; acetine, 1905/1911; and periodate, 1928/1954. A Hintermaier, *Fette und Seifen*, 1955, No. 1, pp. 11-14.

— ★ —

New Improved Syndet

An improved detergent composition is said to result from combining water soluble salts of sulfated ethylene oxide condensates with a compound produced by reacting an alkylolamine with a fatty acid. In addition to properties equal to or better than those of other detergents such combinations have the advantage of not containing high proportions of inorganic salts, such as sodium sulfate and complex phosphates.

Improved foaming and suspending powers are claimed for such compositions, which are suitable for domestic and commercial laundry purposes. British patent 723,916, Marchon Products Ltd., London.

— ★ —

Soap Cleaning Test

Standardized testing of the cleansing action of soap on the human skin by means of photometric determination of the amount of soil remaining after washing yields reproducible results. Uniform application of standardized "soil" is accomplished by means of an apparatus which exerts controlled pressure on a strictly bounded skin area on the inside of the forearm. Washing is performed by an apparatus applying to this same area a controlled amount of the cleansing solution at a uniform degree of agitation.

Marked differences in the cleaning powers of different soaps were found and experiments on rough skin yielded considerably lower cleansing values than those performed on smooth skin. W. Blaich and U. Gerlach, *Fette und Seifen*, 1955, No. 1, pp. 33-36.

— ★ —

New Uses for Acrolein

Results of detailed studies on acrolein were reported by G. W. Hearne, Shell Development Co., New York, in a paper read before the fourth World Petroleum Congress held in Rome, last month. Shell research discovered a method for production of acrolein from air and propylene, which has placed the chemical among commercially producible chemicals. The firm announced plans for the construction of an acrolein plant at Norco, La., to operate in conjunction with a hydrogen peroxide unit for the production of glycerine. Assured use in this process is expected to make possible the manufacture of additional quantities at low cost. Mr. Hearne stressed the great versatility of acrolein and its reactivity.

— ★ —

New Armour Laundry Rinse

A new rinse which is claimed to whiten, brighten, and soften clothes in a single operation was announced last month by the industrial soap department of Armour & Co., Chicago. Tradenamed "Velva-Soft with Blu-Brite," the product is designed for use in commercial, self-service, institutional, diaper service, and other laundries. If applied in the final rinse, the maker claims it eliminates the need for bluing, brightener, or any fabric oils in the wash formula. In addition, the rinse reduces static, thus making clothes easier to handle and iron. Armour says that drying and extraction time is cut by 15 percent, dirt and grease absorption by fibers reduced, and scratching and chaffing in starched shirts eliminated. The sanitizing properties of "Velva-Soft with Blu-Brite" are said to inhibit microorganism causing diaper rash. The product comes ready to use in 125-250, and 450 pound drums.

Free promotional material has been prepared for users of the rinse. Further information is available from Armour's industrial soap department at 1355 West 31st Street, Chicago 9.

FLORANOL

(AN ESTER)

Typical Specifications:

PHYSICAL APPEARANCE:	Light yellow liquid.
ODOR TYPE:	Fruity Rose.
SOLUBILITY:	45 parts soluble in 100 parts of 70% Ethyl Alcohol.
STABILITY:	Stable in the presence of alkalies.
REFRACTIVE INDEX $n\frac{20}{D}$:	1.4941
SPECIFIC GRAVITY $\frac{20}{20}$:	1.0510
QUALITY:	Specifications carefully checked in our modern control laboratories.
SUGGESTED USES:	As an addition to Rose compounds — 3% to 5% to impart the fruity floral note found in all Roses. Invaluable in Rose compositions for creams, powders, lotions, etc. Moderate in price.

Other VERONA Rose ingredients manufactured from synthetic raw materials produced entirely within the U.S.A.:

ROSANOL · CUMIN KETONE · RESEDALIA

DIMETHYL OCTANOL SPECIAL · DIMETHYL OCTANYL ACETATE

DIMETHYL OCTANYL FORMATE

Sole representative in the United States for J. & E. Sozio, Grasse, France

Resinoides **Essential Oils** **Natural Absolutes**

Write for our complete list

PRODUCTS BUILD SALES FOR *Your* PRODUCTS

Aromatics Division

VERONA CHEMICAL COMPANY

Plant and Main Office: 26 Verona Avenue, Newark, N. J.

1210 Rosedale Avenue, Chicago, Ill.

PRODUCTION Clinic

By E. G. Thomssen, Ph.D.

LIABILITY upon the part of manufacturers and distributors for their products is becoming more and more of a problem. It is particulary disturbing to production men for most of the responsibility falls on them. If a product is said to be inefficient for the purpose it is offered or causes bodily injury, production executives are the ones usually blamed.

In the recent issue of a small city's newspaper, I glanced over the district court's calendar. It included four product liability suits, each for a substantial sum. Two of these were against the makers of well known syndets, the others concerned food products. I knew the court officials in these cases very well and wrote the clerk of the court for a resume of the charges against the detergents. In both cases it was claimed that through their use the hands of the users were badly and permanently burned. The clerk also told me that product liability cases had multiplied dangerously in his court in recent years. Juries had assessed substantial damages in recent past cases. The situation, he said, is now quite general.

Product liability cases have been suffered through by me during my experiences in handling a variety of products. It is my observation that injury claims fall into at least four different categories. These are: feigned injuries, exaggeration of injury claims often due to personal idiosyncracies, injury claims based upon negative type advertising by competitive products and injuries actually sustained.

Up to about 25 years ago product liability was not much of a problem. Very few manufacturers even bothered to insure against it and insurance companies did not stress the need for such policies.

Manufacturers involved in such litigation based their defense on the premise that the buyer should beware. In most cases they won by this strategy. Today it is necessary, particularly in the case of chemical specialties, for the maker to carry liability insurance because of the possibility that in some case a costly civil penalty will be levied should the defendant manufacturer lose his case. Insurance companies, besides providing protection against liability suits, also are in a position to render advice and are in a better position than a manufacturer to settle claims out of court.

In the case of feigned injuries, insurance records show that certain individuals make a practice of baiting companies in different fields. A list of names of these "chiselers" is kept. This is most helpful in preventing repeated damages being obtained. I know of one case in which a woman repeated her demands three times, after she won small damages in her first attempt by obtaining a compromise settlement, rather than having the case go to trial. All subsequent cases were thrown out of court. Feigned injuries are often hard to combat especially if medical opinion differs.

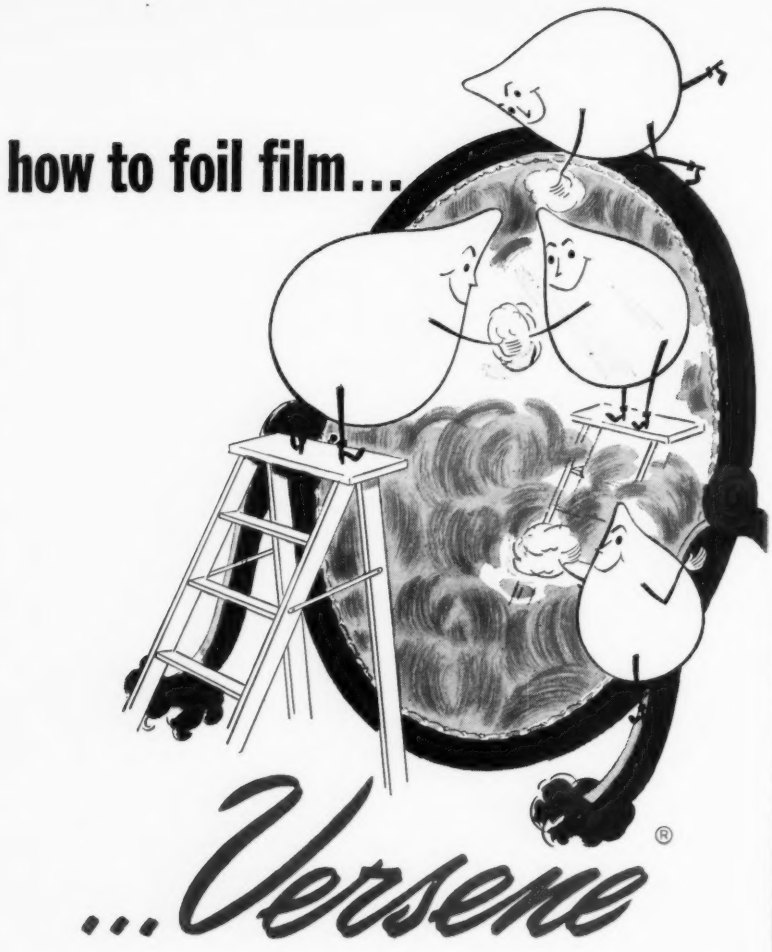
Troublesome kinds of claims are those which are exaggerated. The exaggeration may imply that a slight injury is permanent or more serious than it would appear. It may also mean that an allergy or personal idiosyncracy of the user is involved. Because a user is sensitive to some product, does not necessarily mean that the product will cause ill effects in all users. The eating of strawberries is a classic example. Some persons suffer a rash upon eating them, whereas most people relish and thrive on the berries. It is, however, a difficult matter, in all cases, to convince a jury of these facts. Damages at times are unjustly awarded upon exaggerated injury claims.

Dr. Thomssen

The use of negative type advertising causes people to assume that certain products are harmful to them. When they use products that are disparaged by competitors and experience even the slightest discomfort following their use, they immediately consult their attorney and institute a liability suit. The trend away from soap to synthetic detergents is typical. Dermatitis may be caused by the synthetics in a limited number of cases. This exhibits itself by reddened skin and, at times, eruptions. The trouble usually clears up in a few days without any serious results. Individuals thus affected ought to wear rubber gloves as not only syndets but soaps, soda and ammonia may also irritate their skins.

"Detergent burn" has had considerable publicity by some purveyors of synthetic detergents through statements in their advertising that the products they sell do not cause this condition. Such propaganda injures not only themselves but hurts the entire field of syndets. Dermatologists readily seize upon the admission that these cleaners cause skin injuries and so inform their patients. As a point in question this quotation from a prominent dermatologist's address before a whole state medical meeting is pertinent. "The detergent makers won't admit their products cause irritation when you face them with it, but I notice they advertise about detergent burn on the radio and television."

Other items besides deter-



"DULL" *BUT* CLEAN

Modern soaps and syndets are expected to do more than just get things clean. They must also make them *look* clean. This can be done only when *all* of the film from "insolubles" can be removed in rinsing.

"BRIGHT" *AND* CLEAN

Versene, when added to any cleansing formulation (regardless of water hardness), prevents the formation of the film-forming insolubles that invariably cause dulling. Through the proper addition of Versene to your formula you can achieve improved performance for your product and at the same time give it a definite sales advantage over competition.

INVESTIGATE VERSENE

No matter what you make in the way of soaps, syndets, shampoos, or cleansing compounds, it will pay to investigate Versene and Versene products. Extremely stable at high temperatures through the pH range, they offer many exceptional advantages to formulators everywhere. Ask for technical data and samples.

KEY TO CHELATION

THE DOW CHEMICAL COMPANY
MIDLAND • MICHIGAN

DOW

WAREHOUSE STOCKS

Chas. S. Tanner Co., Charlotte, N. C., Greenville, S. C., Knoxville, Tenn.
Kraft Chemical Co., Inc., 917 West 18th Street, Chicago 8, Illinois
Independent Chemical Corp., One Hanson Place, Brooklyn 17, N. Y.
Borada & Page, Inc., Houston, Dallas, Corpus Christi, Odessa, New Orleans, St. Louis, Wichita, Oklahoma City, Tulsa, Kansas City, Mo.
George Mann & Co., Inc., 251 Fox Point Blvd., Providence, R. I.
Braun-Knecht-Heimann Co., San Francisco, Calif., Salt Lake City, Utah
Braun Corporation, Los Angeles, California
Van Waters & Rogers, Inc., Seattle, Wash., & Portland, Ore.
European Manufacturing Agent:
Rexolinfabriken Aktiebolag, Helsingborg, Sweden

gents that are considered harmful by dermatologists include floor wax, polishes, insecticides, strong soaps and certain cosmetics.

There are cases where damage to the health of consumers of chemical specialties actually occurs. In most cases manufacturers are careful to display a warning as to proper usage on their label legend. Careless users do not read labels thoroughly. It might help if warnings were in bold face type and prominently placed, preferably at the very beginning of the directions for use. As children are often injured, the warning to keep products away from them is advisable. Administrative agencies of government also require certain statements and will help in drawing up warning copy.

When errors that cause harmful results are made in manufacturing prompt efforts must be made not only to withdraw and examine all goods unsold but to contact as many distributors as possible. More than one case is on record where procrastination has resulted in ruin or many costly liability suits that could have been avoided. Out of court settlements, it is well known, usually are preferable.

Protective Coatings

THE use of protective coatings on such equipment as tanks and troughs can cut down on and, sometimes eliminate, the need for repairs and replacement. Two such coatings are those of Neoprene, made by the Rubber Chemicals Division of E. I. du Pont de Nemours & Co., Wilmington, Del., and "Glascote," produced by Ev-R-Shield Products, Inc., Joppa, Ind.

Neoprene withstands the corrosive action of moisture and acids for years. It has been successfully used on cooling towers, V belts, conveyor belts and wooden tanks. A free booklet, "A Report on Neoprene for the Industrial Executive" is available on request.

"Glascote" is resistant to all solvents. It forms a tough, thermal setting, plastic coat that bakes on to a tile-like finish. It is readily applied to porous substances by brush,

spray gun or roller. Further information is available upon request.

Proportional Metering

APPLIED Engineering Associates, Brooklyn 37, N. Y. offers automatic continuous proportional metering systems for the processing of two or more liquid components in any desired range of ratios. Mechanically these are simple. Versatility and low maintenance costs are additional features.

These systems will handle all ranges of viscosity, from water-like to non-flowing pastes, without regard to viscosity differences in components being metered. Pressure feed of components to the systems is employed to insure component material flow and complete filling of each of the metering elements. Degree of accuracy of the systems is independent of material flow characteristics and will conform to the most stringent process requirements. Control of proportion is actuated by either component being metered. Pressurized feeding of material through the sealed systems prevents the introduction of air into the system. The systems can be used in conjunction with continuous or batch processing. The materials being metered flow through the system at a rate commensurate with demand for materials. Throughout all rates of flow, the accuracy of proportion is constantly maintained.

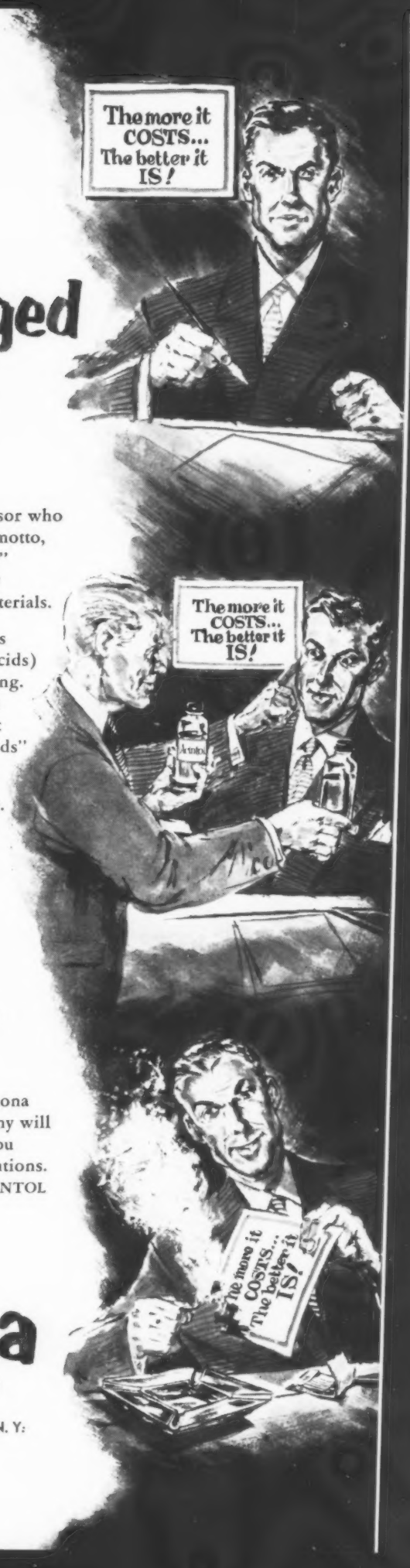
Demonstration equipment is available at Applied Engineering Associates' plant.

Pump Trouble Chart

A HELPFUL chart designed to identify quickly the probable source of failure or erratic performance in most widely used types of rotary displacement pumps is contained in a pamphlet "Pump Chart Spots the Trouble," prepared by Eco Engineering Company, Newark, N. J.

The chart details over 25 possible mechanical and chemical trouble symptoms such as noisy and intermittent operation, rapid wear, leakage, seizure, foaming, high

(*Turn to Page* 79)



The man who changed his "motto"

There was once a chemical processor who was very proud of his purchasing motto, "The more it costs, the better it is!" For many years this man invariably bought the most expensive raw materials.

Then one day he compared samples of ACINTOL® FA (Tall Oil Fatty Acids) with more costly oils he'd been using. This spot-check led him to try it in his own processes. What a pleasant surprise! ACINTOL FA rated "orchids" for quality everywhere he tried it.

So his pet theory went up in smoke. But he didn't mind eating a little crow. Because ACINTOL FA turned out to be the ideal material for processing into alkyd esters, paint driers, non-ionic detergents, hydrogenated fatty acids, fatty alcohols, and other fatty acid derivatives.

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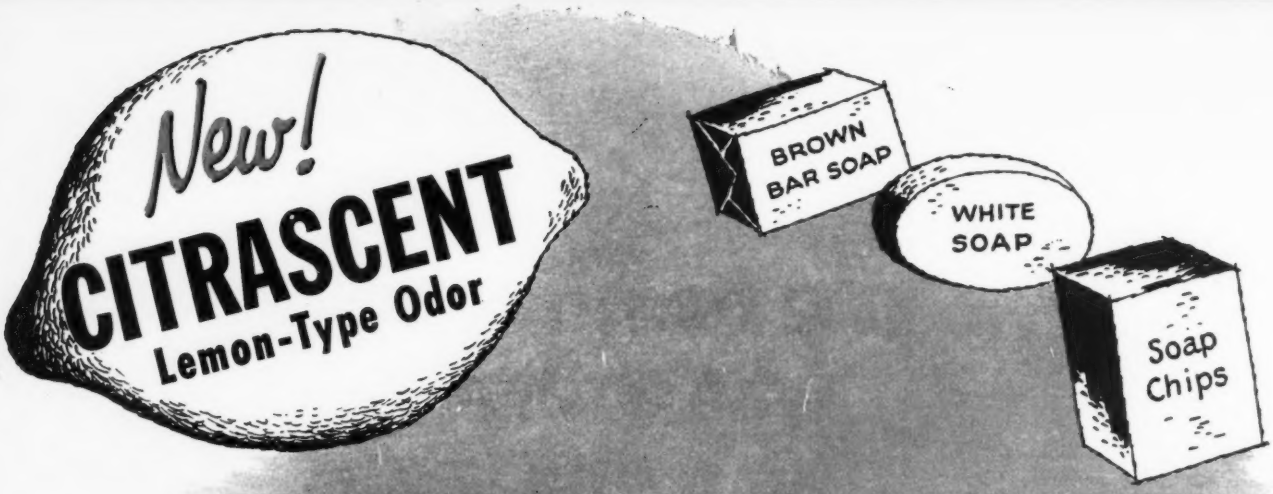

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power requirements and faulty delivery.

The four-page folder also includes an explanation of how and where the chart applies and a brief description of the types of equipment that fall into the rotary pump class. Copies are free on request to: Eco Engineering Company, Newark, N. J. Ask for Bulletin PT.

— ★ —

Measures Oil Stability

Stability of animal and vegetable fats and oils is measured by an apparatus introduced recently by Arthur S. LaPine & Co., Chicago. Employing the activated oxygen test method, the unit bubbles clean air through a sample at a constant rate until rancidity develops, while the sample is maintained at a constant temperature of 208°F. Time of aeration until rancidity sets in is recorded and then correlated with peroxide values, which have been determined by chemical tests. Results indicate potential keeping time of the fatty materials under test.

A circulating pump, thermoregulator, two heaters, and a relay with on/off and high/low switches are included in the constant temperature bath. The air distribution system comprises a stainless steel manifold, air pressure regulator, needle valve, pressure-regulating columns, and calibrated capillary tubes. An air-purifying train is also available as part of the unit.

— ★ —

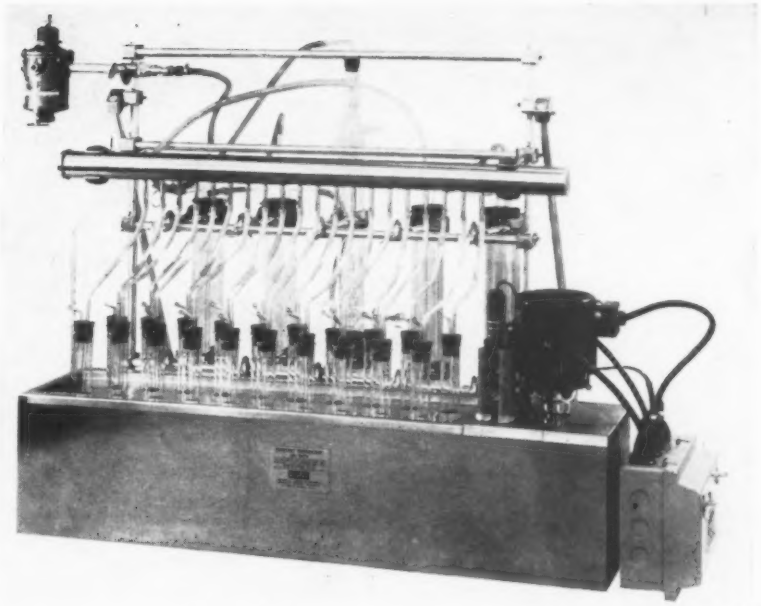
Portable Evaporator

A portable, laboratory model "Turba-Film" evaporator was introduced recently by Rodney Hunt Machine Co., Orange, Mass. Designed for pilot plant study of evaporation, single step distillation, deodorization, heating, and cooling of liquids, bases, and slurries, the unit has a heat transfer area of one square foot, uses the agitated film method developed by Rodney Hunt.

— ★ —

New "Emcol" Bulletin

Uses and properties of "Emcol E-11" alkyl benzyl triethyl ammonium chloride are outlined in technical bulletin No. 45 published last month by Emulsol Chemical Corp., Chicago. This new quaternary ammonium salt is primarily intended for incorporation in germicide, deodorant and surfactant formulations. Low cost per unit makes the product particularly suitable for industrial and institutional use. As a deodorant "Emcol -11" may be applied in circulating systems; by mopping, swabbing, or rinsing surfaces; from aerosol dispensers, or as a fogging spray. It controls a wide variety of odors, is suitable for use in food plants, transportation facilities, air conditioning systems, disposal systems, but is not recommended as an air deodorant in occupied quarters.



New fat stability measurement apparatus

As a germicide the product exhibits rapid and relatively non-selective action. It is compatible with non-ionic detergents and water-softeners, and is non-corrosive to metals, rubber, plastics, ceramics, and other surfaces if applied in use dilutions. In addition, it is low-foaming and stable to alkali, acid, and high temperature. These characteristics suggest application in detergent-sanitizer formulations.

"Emcol E-11" serves as a final bacteriostatic rinse in the laundering of diapers, hospital linens, etc. It can be used in the treatment of industrial water and swimming pools because it inhibits noxious microorgansims.

Supplied in 50 per cent aqueous solution the product comes in 55-gallon lined steel drums. The bulletin and further technical information concerning "Emcol E-11" are available from Emulsol at 59 East Madison Street, Chicago 3.

— ★ —

Book on Conveyors

A 48-page, hard cover book giving extensive engineering and application data on its line of steel-belt conveyors is now available on request from Sandvik Steel Belt Conveyors, Division of Sandvik Steel, Inc., Fair Lawn, N. J. Fully illustrated with both photographs and drawings, the book treats extensively of conveying via a solid steel belt. Basic features of the conveyor and the steel belt are given, as are details on characteristics, capacities, adaptations and design.

Details of conveyor components such as idlers, drive, tension end, discharge devices, safety scrapers, etc. are given in the section devoted to pictures and descriptions of typical steel belt conveyors as used in a wide variety of applications in many different industries.

Free copies are available.

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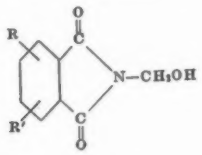
NEW Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication. Complete copies may be obtained by writing to the publisher of this magazine, Mac Nair-Dorland Co., 254 W. 31st Street, New York 1, N. Y., and remitting 50c for each copy desired. For orders received from outside of the United States the cost will be $1.00 per copy.

No. 2,711,987 Insect Toxicant Reaction Product of Hydroxyaromatic and Alkali Orthosilicate Compounds, patented by Frank H. Lyons, Memphis, Tenn., assignor to E. L. Bruce Co., Memphis, Tenn. The patent covers an insect toxicant composition comprising an aqueous solution of the reaction product of hydrated sodium orthosilicate with a member selected from the group consisting of beta naphthol, phenol, a halogen substituted phenol, cresol, a halogen substituted cresol, anthrols, and hydroxy substituted phenols, the hydrated sodium orthosilicate and said member being reacted in the ratio of from 1 mol of hydrated sodium orthosilicate to from 1 to 3 mols of said member.

No. 2,711,397. Stabilized Cream Shampoo, patented by Emily M. Owen, West Orange, N.J., and Saul R. Buc, Easton, Pa., assignors to General Aniline & Film Corporation, New York. A cream shampoo is covered comprising essentially an aqueous emulsion of anionic detergent and a compound of the general formula:



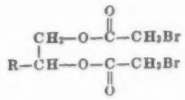
where in R and R' are selected from the group consisting of hydrogen, bromine, chlorine, primary amino and nitro.

No. 2,711,384. Method of Killing DDT Resistant Flies with DDT and Di(4-Chlorophenyl)-Ethinyl Carbinol, patented by Merrill M. Darley, Little Neck, N. Y., assignor to Allied Chemical & Dye Corp., New York. Disclosed is a method which comprises applying to 2,2-bis(p-chlorophenyl) 1,1,1-trichloroethane resistant flies and their habitat a composition comprising as active toxic ingredients 1 part by weight of 2,2-bis(p-chlorophenyl) 1,1, 1-trichloroethane and from about 1/10 to 1 part by weight of di(4-chlorophenyl) ethinyl carbinol, and wherein the mixture of toxicants exerts a synergistic effect.

No. 2,711,367. Weed Killer Containing Borax, patented by Clifford A. Parish, Sr., Kansas City, Mo. A herbicidal composition is described comprising a slurry produced by admixing from ¼ to 2 pounds of aluminum sulphate; from ½ to 4 pounds of borax; and from 1 to 5 gallons of water.

No. 2,710,057. Tubular Drying of Soap, patented by Gordon H. Bassett, Wayland, and Freeman G. Packard, Lexington, Mass., assignors to Lever Brothers Co., New York. The patent discloses a method of partially drying soap by removal of a substantial portion of moisture from soap having an initial high moisture content. This comprises introducing a continuous and substantially homogeneous liquid stream of the soap into the inlet end of a tube at a pressure between about 50 and about 300 p. s. i. g. for advancing the stream through said tube, subjecting the advancing stream of soap to a supply of heat, correlating the supply of heat to the rate of throughput of soap within the tube to boil the liquid soap under the pressure conditions within the tube for initiating the generation of steam at a point in the tube in substantial advance of the discharge end, but insufficient to dehydrate the soap completely, and increasing the sensible temperature of the soap from the inlet end to said point of boiling, and continuously discharging from the discharge end of the tube and at a reduced pressure below about 35 p. s. i. g., a heterogeneous mixture of steam and partially dried soap, said partially dried soap having substantially less than said high initial moisture content, whereby the temperature decreases from the point of boiling to the discharge end.

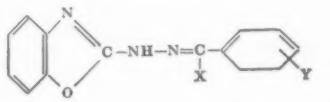
No. 2,711,949. Method and Composition for the Control of Plant Growth, patented by Keith C. Barrons, Midland, Mich., assignor to The Dow Chemical Co., Midland, Mich. The patent teaches a method for the control of plant growth which comprises applying to the plant foliage a phytotoxic amount of a glycol bis(monobromoacetate) of the formula



wherein R represents a member of the group consisting of hydrogen and a methyl radical.

No. 2,710,794. Defoliation of Growing Plants, patented by Geoffrey Edwin Barnsley, Woodstock, Sitting-Bourne, England, assignor to Shell Development Co., Emeryville, Calif. A method is disclosed of defoliating living plants which comprises applying to the leaves of said plants an effecting defoliating amount of a composition containing N-nitroso, N-methyl urea as active defoliant.

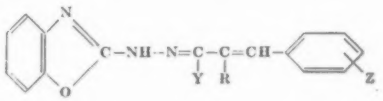
No. 2,710,823. Fungicidal Compounds, patented by Leon Katz, Springfield, N. J., assignor to Schenley Industries, Inc., New York. The patent describes a compound of the group consistng of hydrogen and lower alkyl, of aldehydes and ketones represented by the general formula:



in which X is a radical of the group consisting of hydrogen and lower alkyl, and Y is a substituent radical of the group consisting of 2-hydroxyl, 4-carboxy, 4-carboxymethoxy (—OCH_2COOH), 4-di-(lower alkyl)-amino and 4-chloro.

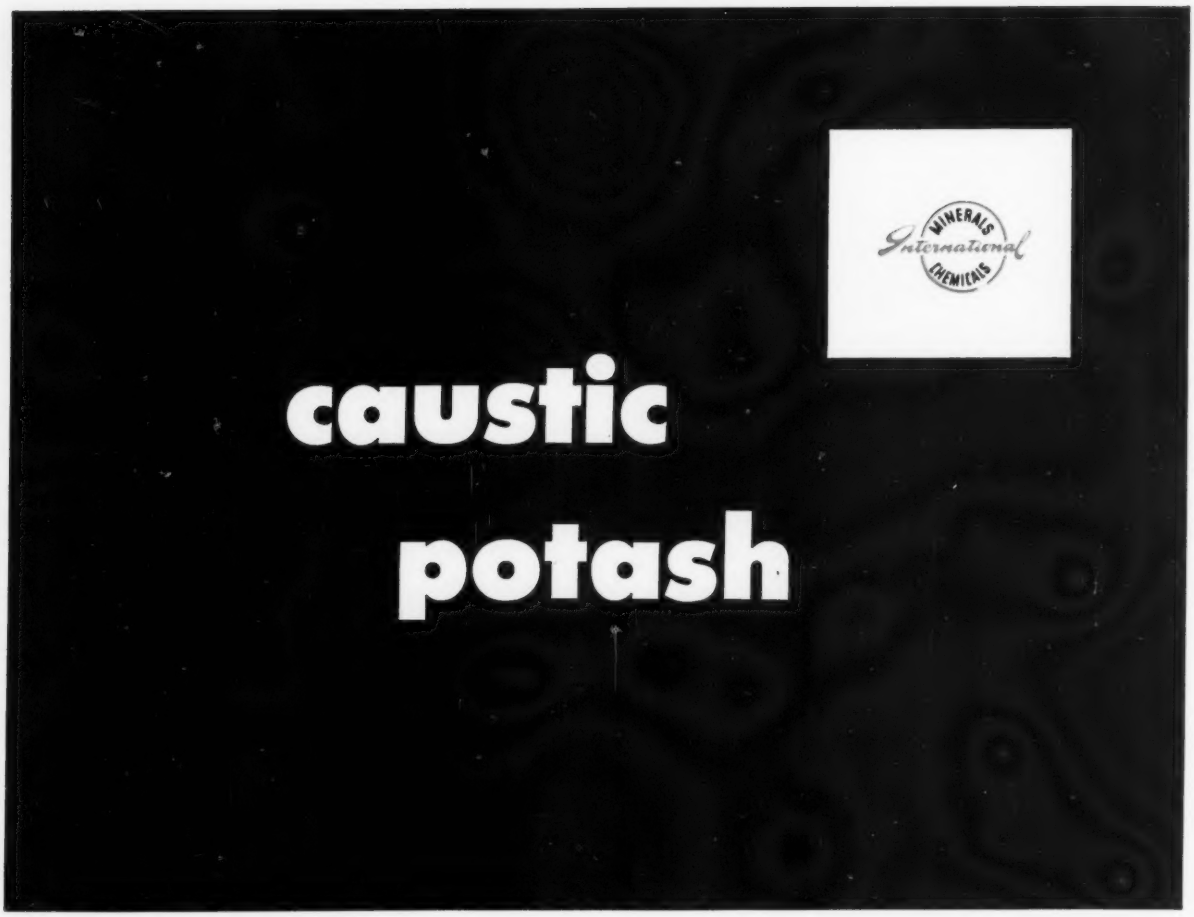
Also covered is a bactericidal and fungicidal composition comprising a compound as defined above and conventional dispersing ingredients.

No. 2,710,824. Fungicidal Compounds, patented by Leon Katz, Springfield, N. J., assignor to Schenley Industries, Inc., New York. This patent covers another compound of the group consisting of benzoxazole 2-hydrazones of aldehydes and ketones, but, represented by the following formula:



in which Y is a radical of the group consisting of hydrogen and lower alkyl, Z is a radical of the group consisting of hydrogen, hydroxyl, and di-(lower alkyl)amino and R is a radical of the group consisting of hydrogen and lower alkyl.

No. 2,710,856. Condensates of Tall Oil with Polyalkylene Polyamines Containing Hydroxy Ethyl Groups, patented by Joseph Emmett Carpenter, Greenwich, Conn., assignor to American Cyanamid Company, New York. A cationic surface active agent is covered comprising the product obtained by reacting tall oil at a temperature of from about 120° C. to 300 C. with a quantity of a polyalkylene polyamine containing at least 3 nitrogen atoms, said quantity of polyalkylene polyamine containing amino nitrogen at least equivalent chemically to the fatty acids plus the rosin acids of said tall oil, and said quantity of polyalkylene polyamine also containing hydroxyalkyl substituents at least equivalent chemically to said rosin acids of said tall oil but less than the number of equivalents of said rosin acids plus said fatty acids of said tall oil whereby said rosin acids are substantially completely combined with said polyalkylene polyamine.



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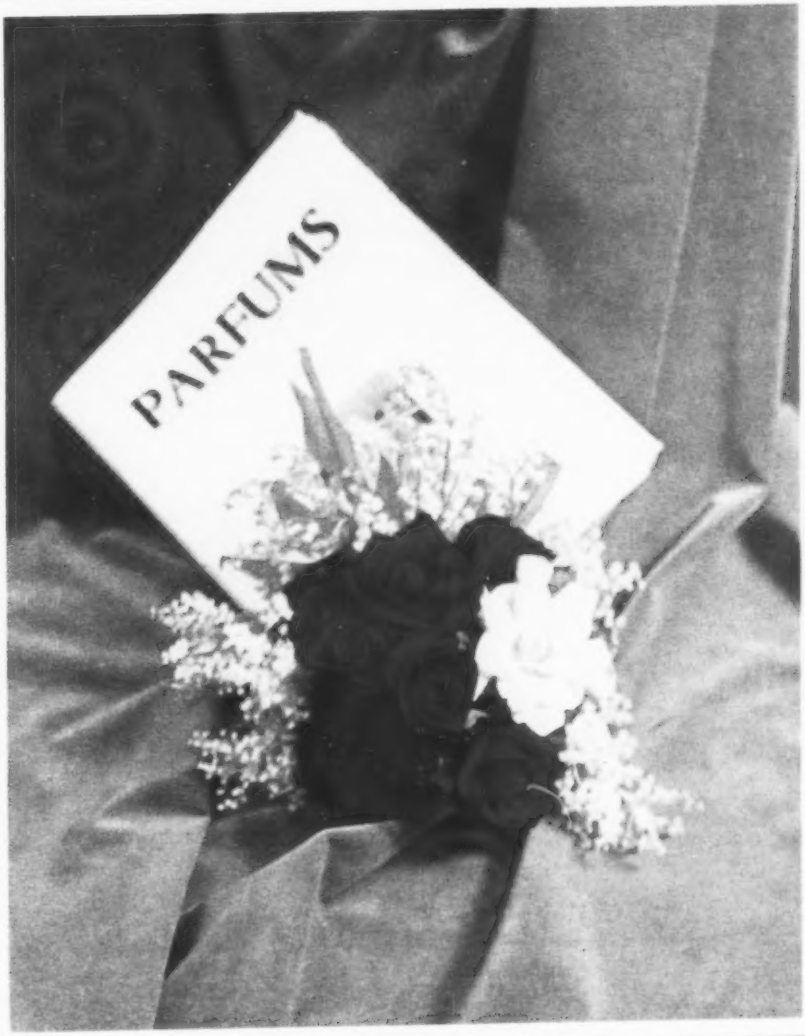

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SOAP PLANT Observer

By John W. McCutcheon

IT has been recently reported (*Soap & Chemical Specialties*, June, 1955, "After Closing," facing page 18) that Dow's synthetic glycerine plant at Velasco, Tex., rated to produce 36 million pounds per year will open in a few months. This recalls our comments of several months ago (April issue) regarding the glycerine situation. Nothing has taken place since to change the writer's opinion on this matter. Dow's entry into this field is timely. With both Shell and Dow in production, the situation appears much less serious than otherwise. It is not too difficult to install duplicate equipment to double production once a process has been worked out on a commercial scale. It is the writer's opinion that by 1960, about 30,000 tons per year more synthetic capacity will be required than is at present available, including Dow's.

* * *

IT is a peculiar thing to watch market trends as exemplified by the parade of new products. Liquid detergents are making very rapid strides in America at the present time and represent something like six percent of the total synthetic sales. According to the Soap Association data, 1954 sales of liquid synthetic detergents increased 25 percent over 1953, and 1955 first quarter sales are 12 percent above those of the comparable quarter of 1954.

A few years ago the sales of liquid type products would not have been thought practical on a large scale. The American housewife heretofore has always liked to add her own water! But the shift in position seems to be due to the development of unproved packaging such as the use of cans, plus the tendency for the housewife to buy a variety of cleaning agents designed for each job. Latest in the list of

liquid canned products is "Vel" by Colgate-Palmolive Co.

The use of liquid detergent products was really pioneered in Europe. For a number of years now, such products have sold well in Norway, Belgium, Holland, etc. As far as known, these were all packaged in glass with deposits required on the bottle. One manufacturer in Belgium was known to have made more money out of the deposits received on non-returned bottles than on the product itself! This is not uncommon. When the writer was in charge of glycerine production some years ago, it was suprising how much money accumulated against the drum deposit account. It probably didn't make much difference whether we sold drums or glycerine as far as profits went!

At the same time as the housewife is turning to liquid detergents, she is also turning to solid bleaches! One of the latest products in this category is "Trend" made by Purex Corp. The advantage of a bleach in powdered form is obvious. It is easier to use, ship and is stable. It is doubtful, however, that powdered bleaches will entirely displace their older cousins, the liquids. Each have characteristics of their own which are not entirely interchangable. Incidentally, perborate, which is widely used as a solid bleach, has been extensively used for decades in Europe in combination with soaps and detergents under conditions of use that are not acceptable in America.

* * *

"SULFAN" as a sulfonating agent is being used with a fair degree of frequency. Probably the first to set up such a process was Ninol Laboratories, Inc., Chicago. More recently another large company in the cosmetic field was found using it for the sulfation of lorol alcohol to make a shampoo base material. Still more recently, Treplow Products, Inc., have established this system.

The main advantage of sulfating with "Sulfan" (trade name product of General Chemicals) is the fact that products high in active concentration and with only trace amounts of salt are available. It is also claimed that the preparation of metallic salts other than sodium is greatly facilitated. The process generally used consists of vaporizing the SO_3, mixing it with a large volume of air or other gas such as nitrogen, sulphur dioxide, etc. and then blowing this mixed gas through a spray of the base hydrocarbon alcohol or what have you.

The gases are generally recirculated and this often is the cause of some headaches because the active SO_3 chars some of the base in its reactive ferocity, and this charred material will discolor the product if not carefully filtered out.

An interesting group of materials made by Treplow Products, Inc., are the sulfated esters of alkyl phenoxy polyoxyethylene ethanol. Treplow Products also make sulfated alcohols and alkyl aryl sulfonates. These are made under license and sold under the registered tradename "Trepenol." This particular series of products are said to be very suitable as a high foaming dishwashing agent, as textile scouring aids, etc. They are similar in general type to the "Alipals."

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The interesting part of this development, however, lies not so much in the type of products and methods used. Rather it is in the fact that this company went into the business of sulfating with a rather difficult material. With practically no outside engineering help the firm made a successful operation out of it within a period of six years. This probably characterizes a trend that has been taking place over the past few years—small manufacturers willing to do processing, sometimes intricate, on processes made available from their larger competition by license, or through the expiration of the original patents. The manufacture of the "Igepon" type products, the "Ninols" and the "Aerosols," represent a few products within these classes. All are being made by various scattered groups.

—★—

Valve Bulletin

Monel and nickel corrosion resistant valves are described in a new four-page bulletin published recently by Alloy Steel Products Co., Linden, N. J. Corrosion resistant and mechanical properties of these metals are described and cross-sectional illustrations of gate, globe, and check-type valves are included.

—★—

Analytical Chemistry Book

New Methods in Analytical Chemistry by Ronald Belcher, University of Birmingham, England, and Cecil L. Wilson, The Queen's University of Belfast. Published by Reinhold Publishing Corp., New York, 1955, 287 pages, cloth, 8½ inches by 5½ inches, price $5.50.

This is a compilation of newer analytical methods based on classical techniques. The authors stress that the term "new" methods is used rather flexibly. The last such compilation appeared in 1932 authored by A. D. Mitchell and A. M. Ward and the present volume generally continues where the older book left off. However, a large proportion of the methods included are actually of very recent origin and have not yet reached the standard textbooks.

Many of the methods have been tested by the authors, some have been tried and recommended by other investigators of repute. The aim of the volume is to make these methods readily accessible to many more analysts thus enabling them to test the procedures for their own purposes. Literature references follow each method. Author index and subject index are appended.

—★—

Portable Air Compressor

A new portable electric air compressor for powering pneumatic devices in the absence of piped compressed air, was announced recently by Modernair Corp., 400 Preda Street, San Leandro, Calif. "Model 100" plugs into any 110 or 220 volt a.c. line, delivers up to 100 psi pressure and 3.5 cfm free air. No tank or safety valve is required and the sealed ball bearings used throughout need no lubrication. The unit measures 13 inches in length, 10 inches in height, and weighs 40 pounds. It comes with built-in intake filter, 1/3 H.P. motor with capacitor, overload protector, and U/L approved cord and plug.

—★—

New Fritzsche Price List

A new edition of its price list has just been published by Fritzsche Brothers, Inc., New York. The July issue comprises 11 pages, listing essential oils, aromatic chemicals, and related products.

—★—

B&A Tagged Reagents

A line of radioisotope laboratory reagents under the Baker & Adamson label were announced last month by General Chemical Division, Allied Chemical & Dye Corp., New York. Organic and inorganic radiochemicals, including carbon-14 labeled compounds and deuterated compounds, will be supplied in a more readily usable form than those available from the Atomic Energy Commission.

Produced by Tracerlab, Inc., for General Chemical these compounds are described in a special catalog which also gives information on how to obtain authorization from A.E.C. to purchase radioactive chemicals.

—★—

New Aromatics List

Polak & Schwarz, Zaandam, Holland, has just announced publication of its new aromatics price list for July/August. Prices are quoted in British and Dutch currency. Especially featured in this edition are carbinols and carbinyl esters. Characteristics and use information for a number of compounds in this group are included.

—★—

Soap, Detergent Dictionary

Copies of the Spanish-English, English-Spanish vocabulary (*Vocabulario Espanol-Ingles, Ingles-Espanol*) for the soap, detergent, glycerine, perfume, and cosmetic industries, compiled by Ernesto T. Boehme is now available. The 61-page paperbound booklet can be ordered from Professor Boehme at Sumeruelos 203, Havana, Cuba. Price is 50 cents a copy, post paid.

—★—

Surfactant Standards

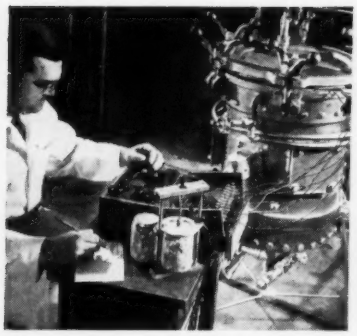
The Argentine Institute for Standardization of Materials (Instituti Argentino de Racionalizacion de Materiales) has set up a special committee to study standards referring to surface active agents. It has passed standard No. 5573 which establishes nomenclature for these products and is currently studying No. 5576 which will do the same for synthetic detergents.

—★—

Anti-Static Detergent

"Plasti-Kleen," an anti-static detergent designed for use on plastic fixtures, was introduced recently by Spix Products Co., Pittsburgh, Pa. The product is said to prevent static build-up on plastic surfaces for months after washing. Recommended use-concentration is two ounces per gallon of water. Surfaces are claimed to remain free from yellowing after repeated washings with "Plasti-Kleen." Further information is available from Spix at 119 Dahlem Street, Pittsburgh 6.

OWENS-ILLINOIS ASSURES YOU A



Co-ordinated Research

Pure research into formulae and fabrication of glass, *packaging research* into processing and handling methods in customer plants, and *market research* into consumer attitudes, add up to greater specific value for your packaging dollar.

Engineered Design

The package that takes your product to market must take *three* needs into account. Considerations of its function in the retail store, its operating efficiency and its consumer utility all become a part of the prescription for an Owens-Illinois package.

The Right Container

Facilities at Owens-Illinois are versatile. Talents are varied and many. So you can count on obtaining a container exactly suited to your needs—one that blends salesmaking beauty, product protection and utility in the proportions required to attract customers.

Hard-working Hypochlorite

Complete Packaging Approach

The Right Closure

Know-how as to the best available liner and closure—best for packing, displaying, or using a specific product—may well be one of the most important single points through which expert packaging counsel will reward you many times over.

Needed Fitments

With emphasis on the word "needed," Owens-Illinois specialists are keenly aware of sales benefits possible through use of plastic shaker and pour-out fitments which are not "gadgets" but which increase consumer satisfaction with your product.

Merchandising Cartons

Modern cartons are developed only through systematic consideration of their opportunity to serve you in the retail store and retail warehouse as well as on your own filling line and in transit. Owens-Illinois is pioneering such developments.

or Gleam-making Polish—

there's an Owens-Illinois Package that Sells while it Protects

Your product gets an extra sales "lift" when it comes in a well planned package.

Such a package catches a customer's eye more quickly. It protects its contents—maintains the quality through many openings and closings, and it is convenient to handle and use.

All this adds up to a *salespackage*—the kind of packaging Owens-Illinois has planned and produced for decades.

No matter what the character of your product might be, you can call upon Owens-Illinois, confident that you will receive the help of a marketing-minded supplier ready to provide glass containers of all types, capacities and designs, both stock and custom-made.

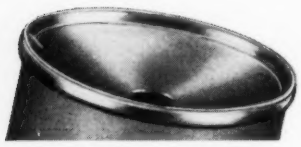
DURAGLAS CONTAINERS
AN (I) PRODUCT

Owens-Illinois
GENERAL OFFICES • TOLEDO 1, OHIO

If your product can be sprayed...

CONTINENTAL HAS AN AEROSOL CAN TAILOR-MADE FOR YOU

DOME TOP — Domes attached and equipped with standard 1" curled opening for all popular valves. Regular (12 oz.) or Midget (6 oz.).



CONCAVE TOP—Tops furnished loose and perforated with hole-punch for specified aerosol valves. Regular (12 oz.).

DOME TOP — Domes furnished loose and perforated with hole-punch for specified aerosol valves. Regular (12 oz.) or Midget (6 oz.).

More than 60 sprayable non-food products are now sold in Continental's three styles of aerosol cans. One of these containers will fit the exact needs of your product too. As part of Continental's Tailor-Made Package Service, we provide on-the-dot deliveries of all the cans you can use. Individualized engineering and master lithography are available... and so are contacts with valve suppliers and commercial fillers. It'll be a pleasure to advise you in any phase of your packaging operations. Why not call Continental at your convenience?

CONTINENTAL CAN COMPANY

Eastern Div.: 100 E. 42nd St., New York 17
Central Div.: 135 So. La Salle St., Chicago 3
Pacific Div.: Russ Building, San Francisco 4

Packaging NOTES

Vogt in New Post

R. A. Vogt has been named general manager of the plastic container division for Bond Crown and Cork Division of Continental Can Co., New York, it was announced last month by John G. Murray, Continental Can vice-president.

Mr. Vogt joined Continental in 1949 as manager of production planning for the Crown and Cork Division. In 1951 he became manager of manufacturing for the division.

—★—

1956 Packaging Exhibit

The Packaging Machinery & Materials Exposition of 1956 will be held Sept. 11-14, 1956 at the Public Auditorium, Cleveland, O., it was announced last month by Tom Miller, president of the Packaging Machinery Manufacturers Institute. It is open only to producers of packaging machinery and allied products. Information concerning the 1956 exposition can be obtained from Hanson & Shea, Inc., 1 Gateway Center, Pittsburgh 22, Pa.

—★—

New Container Lining

An improved protective lining for steel shipping containers was announced last month by Livingston Keplinger, president of the Steel Shipping Container Institute. Designated "Synthetasine 200," this combination of thermosetting phenolic and epoxy resins is said to combine the phenolic's corrosion resistance with the expoxy resins' tenacity and mechanical resistance to rough handling.

The lining has proved successful in tests with styrene monomer, sodium alkyl sulfonate detergent, sulfated fatty alcohol detergent, vinyl chloride, and a number of other hard-to-package products. Mr. Keplinger invited manufacturers to submit samples of products presenting a packaging problem. Alkali, detergents, chlorinated solvents, fatty acids and emulsions are mentioned as among products presenting packaging problems which may be solved by the new lining.

"Synthetasine 200" was developed at Battelle Memorial Institute, Columbus, Ohio, as part of a continuous research program sponsored by the institute. It is being produced by licensees of Synthetasine Protective Coatings, Inc., New York, whose stock is wholly owned by members of the Steel Shipping Container Institute.

The appointment of E. C. Faust (left) and G. R. Hollen as assistants to the general sales manager of Brockway Glass Co., Brockway, Pa., was announced recently. Both Mr. Faust and Mr. Hollen will continue in their present duties in the planning and control division.

—★—

New Lift Truck

A lift truck system consisting of a lift jack and engaging bracket in conjunction with semi-lift platforms, was introduced recently by Hamilton Caster & Manufacturing Co., Hamilton, O. Quick start, ease of operation, low cost and flexibility are claimed for this "Roll-N-Stor" system. One or more lift jacks can be used in combination with any number of skid trucks. A range of platform sizes is available with all-metal, rubber-tired, or molded plastic wheels.

Attention-getting shelf extender was created and manufactured by the display division of Gibraltar Corrugated Co., Clifton, N. J., for Colgate-Palmolive Co., Jersey City, N. J., to display and merchandise a wide assortment of their toiletries. The shelf extender was conceived to give the products featured billing over competitive products which are left behind on the shelf.

Construction of the Colgate-Palmolive extender, measuring nine inches deep by 12 inches wide and 15 inches high enables it to hold a heavy quantity of products while securely gripping the shelf in drug store or supermarket. The display is printed in three attractive shades of yellow, red and green on snow white corrugated board.

THERE'S *Merchandising Magic* . . . . IN GLASS AEROSOL

New success stories of self-spraying packages are being written daily. What about your product? If now marketed in liquid form, it may gain new sales appeal and value when offered in pressurized containers. And you need not invest a penny in equipment or personnel; we can take care of all filling, storing and shipping. Write for free folders . . . *now!*

CONTINENTAL OFFERS:

Complete Filling Service

We do not merchandise any products of our own. Our sole operation is contract and custom filling of containers with *your* products . . . liquid, pressurized or aerosol . . . in glass or cans.

Extensive Laboratory and Production Facilities

Continental conducts chemical analysis and continuing research on dispensing methods and containers. Filling equipment is the finest in the industry, geared to handle orders of any size. Quality control and inspection safeguard your shipments.

Warehousing and Drop Shipping in Bulk Lots

Extensive storage space permits you to use our two centrally-located plants as nation distribution points, with consequent large savings on freight costs. We handle shipping and paper work. Your orders are ready when you want them.

CONTRACT AND CUSTOM FILLING

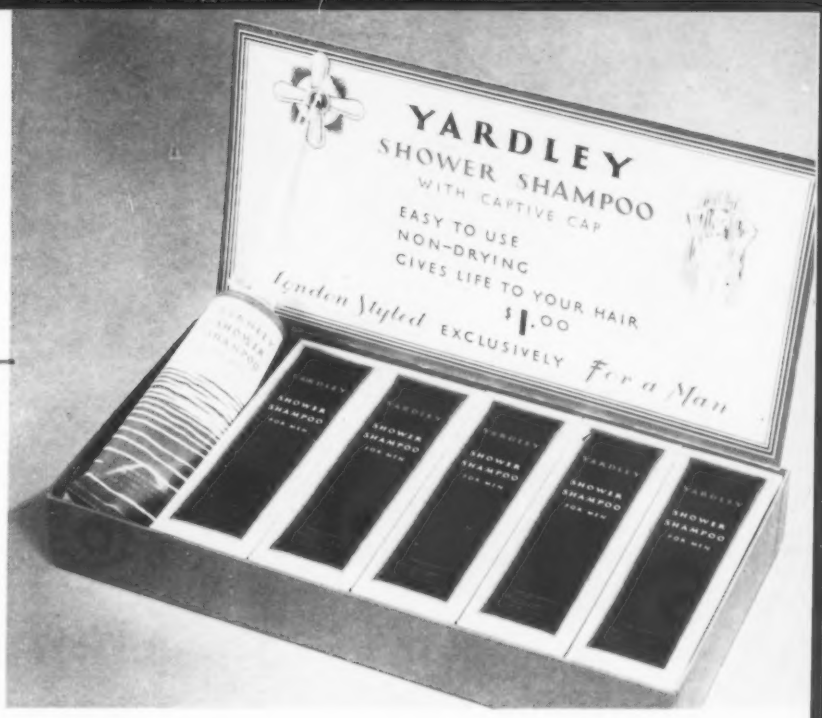
LIQUID SPRAY FOAM

MAIN OFFICE • 123 NORTH HAZEL STREET, DANVILLE, ILLINOIS

CONTINENTAL FILLING CORPORATION

PLANTS • DANVILLE, ILLINOIS — HOBART, INDIANA

What's New?



New "Shower Shampoo", of Yardley of London, New York, is the latest addition to the firm's line of toiletries for men. Shampoo features unbreakable tube, with plastic captive caps. A nylon cord loops through the cap so that tube can be hung over shower handle during use. Point-of-sale counter display contains six units of the new shampoo, which retails for $1.00.

The use of soap to promote its line of private label toilet soaps with the theme "Soap Can Be Profitable" is being featured by Hewitt Soap Co., Dayton, O. Stock market quotations as they appear on a financial page of a newspaper are reproduced on the lid of the box as part of the theme. Soap "coins" carry the Hewitt name and liberty head on one side. A duckling, bracketed by the Latin words "Omnibus Lavandum Est" (all must wash), appears on reverse side.

New "dry wash" aerosol dispensed "Burroughs Hand Cleaner" designed especially for office employees was introduced recently by Burroughs Corp., Detroit. The label design is based on that used for other Burroughs accessories and supplies. Product is designed to remove ink stains, carbon paper smudge, typewriter ribbon ink, grease, oil and cosmetic stains from the hands. The can is a "Spra-Tainer" of the Can Division of Crown Cork & Seal Co., Baltimore.

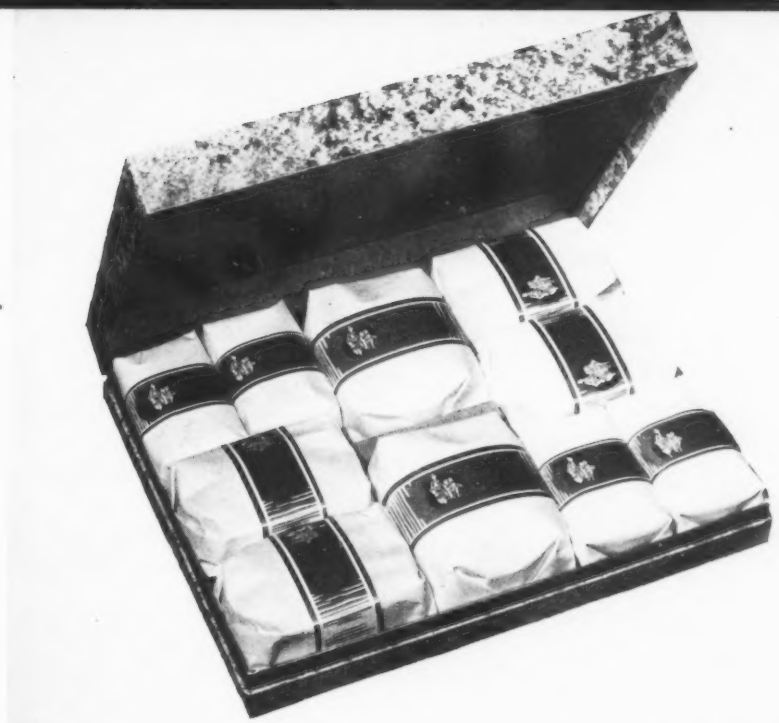
To prevent skinning of printing and lithographic inks in opened containers, Acrolite Products, Inc., West Orange, N. J., has developed an aerosol dispensed coating under the trade name "Ink-O-Saver". The colorless coating, which comes in 12-ounce aerosol container, does not affect color of inks, viscosity or drying time. It seals out air with an invisible protective coating, thus preventng oxidation.

Newest addition to its line of products for pets is "Hilo Dog Spray" of Hilo Co., Norwalk, Conn. An aerosol insecticide, it also contains an insect repellent. The spray is designed to control fleas, lice, ticks, flies, mosquitoes and gnats on dogs. In bright red can it comes in two sizes: six ounces to retail for $1.29, and 12 ounces for $1.69.

Insecticide-treated, heavy Kraft bags, sanitarily packed in Avisco cellophane of American Viscose Corp., Philadelphia, were announced recently by Pest-Guard Products Inc., Dallas, Tex. Green and orange storage bags are folded and cellophane wrapped three to a package. Garment bags are placed in white sleeve printed in red and blue, and wrapped in amber cellophane. Back of sleeve carries printed labels for the user to fill out and attach to bags for identification of garments stored inside.

New aerosol dispensed self-spraying touch-up paints for automobiles, outboard motors and other marine specialty items were announced recently by Tempo Products Co., Cleveland. Coming in 12 or six-ounce "Spra-tainer" aerosol cans of the Can Division of Crown Cork & Seal Co., Baltimore, these sprays are available in a wide range of colors and finishes.

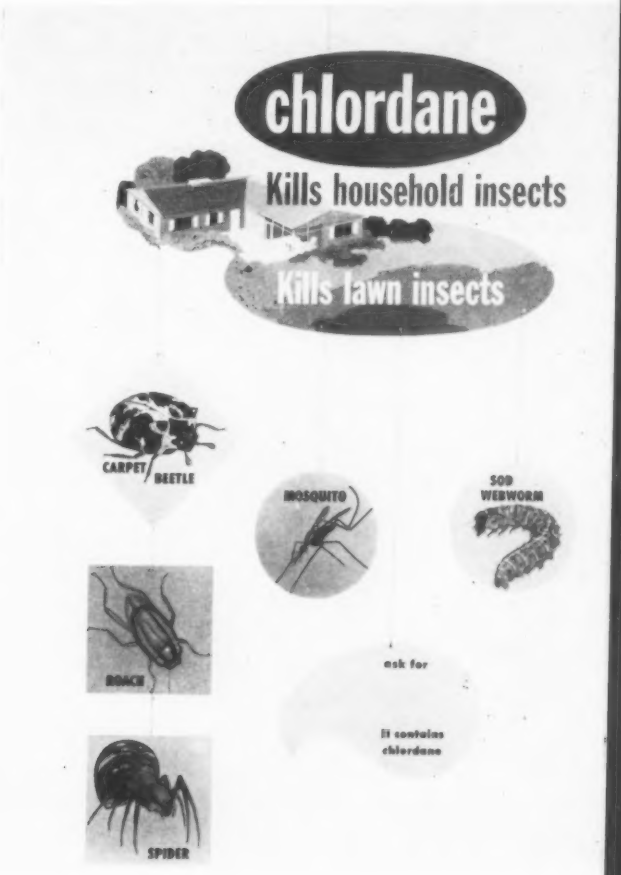
"Lustre-Creme" shampoo of Colgate-Palmolive Co., Jersey City, N. J., in new lotion form, is currently being offered in a special package containing a new free trial offer. The regular 30 cent size of the shampoo in new lotion form is given away free with every consumer purchase of the regular 60 cent size.



For Christmas, Yardley of London, New York, has just announced its "Lavender Soap Chest". A gold screened box, it contains 10 cakes of hard-milled toilet soap: two bath size, four hand size and four new guest bars. The chest retails for $5.00.

New, four-color mobile display with illustrations of the insects controlled by chlordane is now available from Velsicol Corp., Chicago. The unit is designed to be hung over aisles in stores selling insecticides for controlling carpet beetles, ants, chiggers, clothes moths, sod webworms, spiders, mosquitoes, roaches and white grubs.

New "Plasti-Kote Deodorant Air Conditioner" of Plasti-Kote, Inc., Cleveland, was announced late last month. The 12-ounce aerosol package is said to contain an "odor absorbing" chemical. With new, multi-color label, the product retails for $1.49.



DAD'S HANDY HELPER

Whisk on the lather and whisk off the whiskers! Because it's pressure packed in Crown SPRA-TAINER, Yardley's SHAVING FOAM is ready instantly to soothe the way to smooth shaving.

In the last annual Aerosol Contest of the Chemical Specialties Manufacturers Association, Yardley's SHAVING FOAM won First Prize in its division for all-around excellence of design. Think what the exclusive "Modern Design" of seamless SPRA-TAINER, plus Label Design and Lithography by Crown, can do to win sales for *your* product!

In addition to famous SPRA-TAINER, Crown provides a comprehensive range of Quality Cans and Services for manufacturers of food and non-food products. May we help you *sell?*

CROWN

One of America's Largest Can Manufacturers

CROWN CORK & SEAL COMPANY, INC.
CAN DIVISION

***PHILADELPHIA** • CHICAGO • ORLANDO • BARTOW • BIRMINGHAM • BALTIMORE • NEW YORK • BOSTON • ST. LOUIS • SAN FRANCISCO*

Heat-Conditioned Salesmen

That annual hot weather problem—how to be properly dressed for business, and comfortable, in 90-plus degree temperatures — has been neatly solved by a Chicago firm. Vulcan Containers, Inc., manufacturers of steel shipping cans, drums and pails, has outfitted its salesmen with lightweight Latin American style shirt-coats combining the comfort and freedom of the former, with the latter's traditional propriety for business wear.

The loose fitting, suit-coat-length shirt is made of pleated broadcloth and has four pockets. It can be worn buttoned or open at the neck, with or without a tie. The company's president, Vern McCarthy, got the idea during a Central American trip and is pioneering its introduction here. A perspiring Chicagoan gets the lowdown on the shirt-coat from cool, natty L. M. Ferguson, Vulcan representative.

Gair Buys Two Plants

Robert Gair Co., New York, announced recently the purchase of Southern Advance Bag & Paper Co., Boston, and of Great Southern Box Co., New Orleans. The purchases, made within a period of two weeks, give Gair a total of 40 mills and plants in the United States and Canada.

No changes are planned by Gair in the existing organizations of the two firms. Southern Advance will be operated as Southern Advance Bag and Paper Division of Gair under the general managership of Robert L. Fitts, former Southern Advance president. Great Southern will also be known as a Gair division and Shelley Schuster, former Great Southern president has been named general manager of the southern district for Gair's container operations.

One of the Southern Advance mills, located at Hodge, La., has just introduced a new product to the Gair line, a semi-chemical corrugating material for use in shipping containers.

—★—

Crown Advances Crabtree

The election of George W. Crabtree as executive vice-president of Crown Cork & Seal Co., Baltimore, was announced early last month by Russell Gowans, president. Previously he was vice-president of Crown Cork & Seal and general manager of its Can Division. Mr. Crabtree joined the company in 1952 as vice-president in charge of manufacturing of the company's subsidiary, Crown Can Co., Philadelphia. In January, 1954, when the domestic subsidiaries were changed to operating divisions, he was named vice-president of Crown Cork & Seal Co., and general manager of the Can Division. He was elected to the board of directors in June, 1954.

Prior to joining the Crown organization, Mr. Crabtree had been associated with the can manufacturing industry for 20 years.

In his new capacity, the general managers of the company's five operating divisions will report direct to Mr. Crabtree. These divisions are: Crown & Closure Division; Machinery Division, both in Baltimore; Can Division, Philadelphia; Western Division, San Francisco, and Specialty Division, St. Louis.

—★—

W. S. Rheem II a Director

Election of William S. Rheem II, general manager of Rheem Manufacturing Co., Chicago, as a director and vice-president was announced recently by R. S. Rheem, president. The new board member had joined the firm in 1937 as a shop worker during vacations. He became assistant general manager in 1953 and general manager in charge of the company's four operating divisions about 18 months ago.

William S. Rheem II is a grandson of W. S. Rheem, who was president of Standard Oil Co. of California. The new vice-president's father, R. S. Rheem, was co-founder of the Rheem Manufacturing Co. together with his two brothers D. L. Rheem and W. K. Rheem. The firm started as a small galvanizing plant in Emeryville, Calif., in 1925 and at present operates 14 plants in the United States and 17 plants overseas.

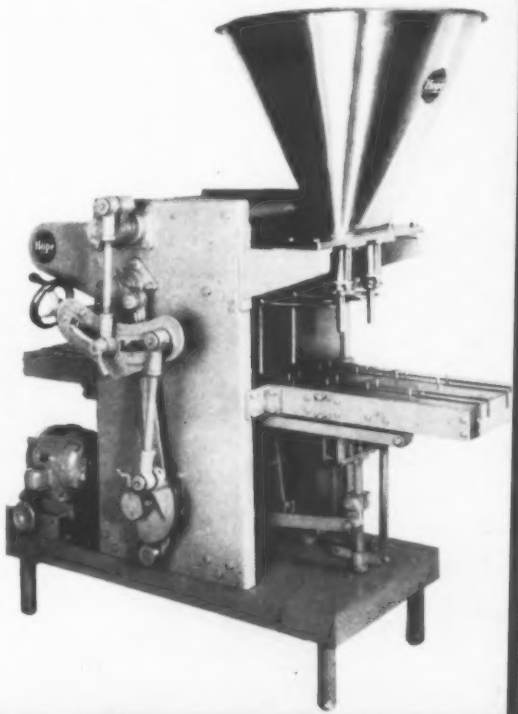
George W. Crabtree

—★—

New Hope Filling Unit

A new, heavy-duty type filling machine was introduced recently by Hope Machine Co., Philadelphia. Model "19 S," said to be suitable for handling soaps and adaptable to handling viscous abrasive products, is of stainless steel construction with ball bearings on all main shafts. The unit comes with a "no container-no fill" device, removable feed bars and stainless steel table plates. The new filler has

Hope heavy duty filling machine



Aerosol Awards...

The fourth annual AEROSOL AWARDS will be made in conjunction with the 42nd Annual Meeting of the

CHEMICAL SPECIALTIES MANUFACTUERS ASSOCIATION

AT THE ROOSEVELT HOTEL, NEW YORK

DECEMBER 5-7, 1955

. . . to include judging and selecting of best aerosol packages of the year

The aerosol package competition and awards will be divided into ten classes as follows:

1. Insecticides, repellents, moth proofers.
2. Room deodorants.
3. Lacquers, enamels, other protective coatings; paint remover.
4. Other household products—polishes, glass cleaner, rug shampoo, water repellent, etc.
5. Shave products.
6. Hair preparations.
7. Other personal products — shampoo, body deodorants, sun tan oil, drugs, etc
8. Snow, all types.
9. Industrial products — lubricants, belt dressings, stencil inks, etc.
10. Glass and plastic packages — all products.

...a top award for "best in the show" will also be made

Rules of the contest:

1. All entries will be made in the name of the brand owner or marketer.

2. Entries will close November 1, 1955. All entries should be sent as soon after Sept. 20 as possible to the Committee at the CSMA office, and should comprise one completely assembled empty container with attached tag showing (a) name and address of brand owner, (b) class in which entry is made.

3. Only one entry may be made by any marketer or brand owner in any one class, but entries may be made in as many classes as desired.

4. Entries are open to any aerosol brand owner or marketer anywhere, and are not restricted to members of CSMA. There are no entry fees or other charges to entrants.

5. Best packages will be selected in ten classes and a "best package in the show" will be named. Judging will be done by a group of qualified experts. Their decisions will be final and will be announced and awards made at the 42nd annual meeting of CSMA in New York.

For entry blanks or information, write to

AEROSOL AWARDS COMMITTEE

Chemical Specialties Manufacturers Association

50 East 41st St., New York 17, N. Y.

Make Plans for Your Entries Now!

a filling range up to one gallon with quick change-over for quantity and containers. It features nozzles for dripless bottom-up fill and special hoppers for agitation.

— ★ —

Automatic Stapler

An air operated fully automatic carton stapling machine was introduced late last month by Container Stapling Corp., Herrin, Ill. Model "T A P" drives more than 200 staples per minute, features a stapling head adjustable to either horizontal or vertical delivery position. When the carton is tapped against the head, the staple is driven, clenched, and anvils automatically retracted. The air valve is operated mechanically. A floor model weighing 141 pounds, costs $380.00; a portable bench model weighing 62 pounds is priced at $370.00. Four anvil sizes are available.

— ★ —

Helen Stratton Dies

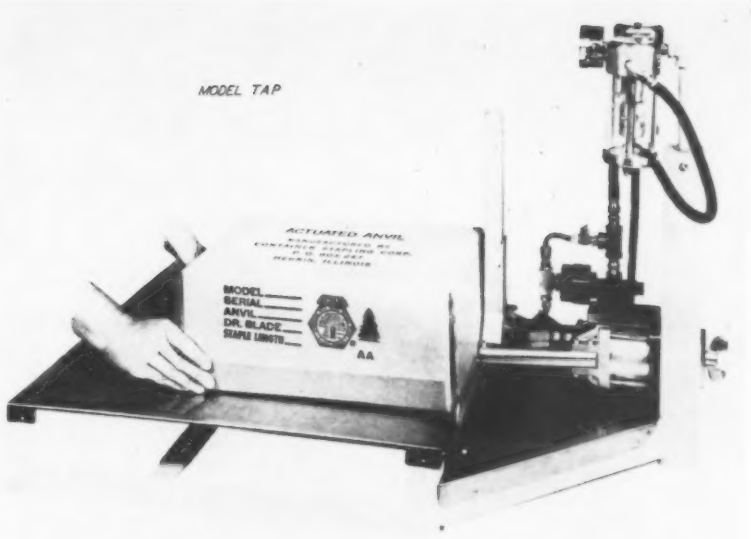
Helen L. Stratton, 62, secretary-treasurer of the Packaging Machinery Institute, Inc., died July 26 at Misericordia Hospital, New York. She had been with the institute since its inception 20 years ago.

— ★ —

Glass Plant for Portland

Ground was broken last month in Portland, Ore., for a new glass container manufacturing plant by Owens-Illinois Glass Co., Toledo, O. Scheduled for completion in August 1956, the plant will consist of four buildings located on a 70-acre site. When completed it will have two furnaces for converting raw materials into molten glass, and the most modern glass blowing machines in the industry, according to H. S. Wade, vice-president of Owens-Illinois and manager of the Pacific Coast Division. Mr. Wade spoke at the ground breaking ceremony which was attended also by Smith L. Rairdon, vice-president and director of marketing; Kenneth C. White, vice-president and general sales manager of the Pacific Coast Division; Walter Funke, chief engineer on the Pacific Coast who will manage the new plant when it is completed; and by a number of other company officers as well as by the governor of Oregon and the mayor of Portland.

The new factory will employ approximately 200 men and women. It will be the third glass container plant operated by Owens-Illinois' Pacific Coast Division. The other two are located in Los Angeles and Oakland.



New air operated fully automatic carton stapling machine of Container Stapling Corp., Herrin, Ill., drives 200 staples per minute.

— ★ —

Aluminum Aerosol Package

A small, light-weight aluminum pressure dispenser was introduced recently by White Metal Manufacturing Co., Hoboken, N. J. Having a capacity of two and three quarter fluid ounces the "Aerotainer" measures one and one half inches in diameter, three and one half inches in height. The neck opening takes a standard one inch mounting cup. Lined with "Epon" lacquer or other protective coating the container is suitable for a wide range of products. It is filled upright through the top and is said to be entirely leak-proof. Light-weight and small size suggest "Aerotainer" for use as a travel dispenser.

New light-weight aluminum containers in miniature sizes for packaging aerosol products were announced recently by White Metal Manufacturing Co., Hoboken, N. J.

— ★ —

Vulcan Containers Formed

A new organization, Vulcan Containers, Inc., Bellwood, Ill., has been formed by consolidation of Vulcan Stamping and Manufacturing Co. and Vulcan Tin Can Co., it was announced last month by Vern I. McCarthy, president. The parent stamping company was founded in 1916 to make small tin cans and metal specialties. In the early 1920's the firm went into the manufacture of steel shipping containers. The tin can department was incorporated as Vulcan Tin Can Co. and moved to another location in 1945. Under the new arrangement both companies will operate under one roof as a single organization.

PRIVATE LABEL AEROSOLS

...if you have an aerosol product
...if you have an aerosol project
...if you have an aerosol problem

LET
G. BARR & COMPANY
HELP YOU ... Tens of millions of successfully selling aerosols are custom formulated and/or filled by G. Barr & Company for many of the nation's leading concerns. These are testimonials of leadership ... earned through outstanding aerosol research laboratories ... creative product development ... meticulous quality control ... effective production economies. And ... G. Barr & Company markets no products of its own.

Whether you need help in developing a new aerosol idea or in filling a current product ... whether you need 1,000 units or a million per week, G. Barr & Company's three aerosol filling plants—New York, Chicago, Los Angeles, can take care of your requirements now. Three key locations to assure you of freight savings and on-schedule delivery.

- *Aerosol filling by refrigeration or pressure.*
- *Aerosol packaging in metal, plastic, and glass containers.*
- *Aerosols as sprays, foams, powders.*
- *Aerosol cosmetics, insecticides, pharmaceuticals, waxes, cleaners, polishes, household products ... your new product idea.*

Address inquiries to: 3601 S. Racine Avenue, Chicago 9, Illinois

G. BARR & COMPANY

Plants in: New York • Chicago • Los Angeles

It takes a sure hand to produce cartons by the million

This skilled die-maker takes over after Gair carton designers set the pattern for sales.

Take your carton, for instance. Gair Package Analysis* points the way to the right material, the right structural and graphic design, and the right printing process for your market and product.

Then it's up to Gair's production men to mass-produce the finished carton. That means precision die-making (shown above) plus perfection in all phases of production: cutting, creasing, folding and gluing. It means skilled men and specialized machinery working together...to make sure there's no variation between the first carton and the millionth to jam your mechanical packaging machinery.

You'll find the right men and machines to do the job at Gair.

**Gair Package Analysis* is a service designed to blueprint a successful carton for your product. One of our men will be glad to stop by and give you the full story.

GAIR
ACM

creative engineering in packaging

FOLDING CARTONS • SHIPPING CONTAINERS
PAPERBOARD • KRAFT BAGS AND WRAPPINGS

ROBERT GAIR COMPANY, INC.
155 EAST 44th STREET • NEW YORK 17, N. Y.

Geigy

A GREAT HERITAGE OF QUALITY

FOR SOAPS AND DETERGENTS

★ FLUORESCENT DYES

★ SEQUESTRANTS

★ FOAM STABILIZERS

★ CLARIFIERS

★ CORROSION INHIBITORS

★ VISCOSITY BOOSTERS

★ EMULSIFIERS

★ SOLUBILIZERS

★ DRY CLEANING DETERGENTS

GEIGY INDUSTRIAL CHEMICALS
DIVISION OF GEIGY CHEMICAL CORPORATION
89 Barclay Street • New York 8, N. Y.

CHICAGO LOS ANGELES PORTLAND, ORE. CINCINNATI

VULCAN

STEEL PAILS

in all Trade Styles and Sizes

1-15 GALLONS

LUG CLOSURE POURING PAILS

Combination shipping and dispensing containers which insure safe delivery of your products and convenience in using them. Full opening for easy filling. Made of fine quality steel on modern production equipment to exacting standards.

DRUM-TYPE CLOSED-HEAD CONTAINERS

Required for the shipment of many thin liquids, these Vulcan containers have welded side-seam, top and bottom double-seamed, and are offset at the top for solid stacking.

STANDARD LUG-CLOSURE PAILS

Made in a wide range of trade sizes for liquid, dry and solid products, these sturdy pails have accurately formed cover lugs which are crimped beneath the curled rim of the pail to make a closure which defies all shipping hazards.

HI-BAKE LININGS — POURING NOZZLES AND SPOUTS— Hi-Bake Linings are applied under the control of scientific instruments and are available in all styles of Vulcan pails and drums. Pouring openings may be had with Push-Pull Spouts and either screw or U-Pressit caps with tamper-proof seals—with reversible, flexible polyethylene spouts or other popular pouring nozzles and spouts as required.

Samples gladly sent upon request

Over 35 Years of Top Quality Containers
"It's Better to Ship in Steel"

VULCAN CONTAINERS INC.

P.O. Box 161, Bellwood, Illinois (Suburb of Chicago)
In Toronto, Canada—Vulcan Containers Limited
Representatives in All Principal Cities

Bids and AWARDS

Low FSS Soap Bids

Murro Chemical Co., Portsmouth, Va., and Procter & Gamble Co., Cincinnati, both submitted low bids on soap in a recent opening for miscellaneous supplies by the Federal Supply Service, Atlanta. Murro bid 12 cents on item 1, 10,656 pounds of grit soap, and Procter & Gamble bid 34.48 cents, item 2, 930 pounds floating toilet soap. May 10, inv. 26777.

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Low Barco Herbicide Bid

Barco Chemicals, Inc., Des Moines, Iowa, submitted the low bid of $5.25 on 500 gallons of herbicide in a recent opening for miscellaneous supplies by the Federal Supply Service, Chicago. May 13, inv. WCH-92341.

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Low Stain Remover Bid

Washington Chemical Sales, Inc., Washington, D. C., submitted the low bid of 14.7 cents on stain remover in a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D. C. May 13, inv. 60732-2.

—★—

Low FSS Soap Bids

Day & Frick, Philadelphia, and Iowa Soap Co., Burlington, both submitted low bids on soap in a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D. C. Day & Frick bid 6.68 cents on item one, and Iowa Soap bid 8.85 cents on item two. May 19, inv. 61152.

—★—

Low FSS Soap Bids

In a recent opening for miscellaneous supplies by the Federal Supply Service, San Francisco, the following low bids on soap were submitted: Procter & Gamble, Cincinnati, item 1, 8.85 cents; Colgate-Palmolive Co., San Francisco, item 2a, 4.8 cents, item 2b, 5.13 cents, item 6b, 9.44 cents; B. & W. Chemical Co., Paramount, Calif., item 3, 54 cents; Klix Chemical Co., San Francisco, item 4, $19.25, item 6a, 7.25 cents; Pioneer Soap Co., San Francisco, item 5a, 5.7 cents, item 5b, 6.1 cents. May 13, inv. SF-7778.

—★—

Low FSS Soap Bids

Kamen Soap Co., New York, and J. Eavenson & Sons, Inc., Camden, N. J., both submitted low bids on soap in a recent opening for miscellaneous supplies by the Federal Supply Service, New York. Kamen bid 4.89 cents, item one, and Eavenson bid 12.73 cents, item two, 10.09 cents, item three. May 20, inv. 61273.

—★—

Low FSS Soap Bids

In a recent opening for miscellaneous supplies by the Federal Supply Service, Atlanta, the following low bids on soap were submitted: Gillam Soap Works, Fort Worth, item 1, 5.36 cents; Iowa Soap Co., Burlington, item 2, 8.73 cents; Baird & McGuire, Inc., Holbrook, Mass., item 3, 38 cents; E. F. Drew & Co., New York, item 4, 9.03 cents; Tesco Chemicals, Inc., Atlanta, item 5, 4.69 cents; J. Eavenson & Sons, Inc., Camden, item 6, 13 cents; Colgate-Palmolive Co., Jersey City, item 7, 10.533 cents. May 27, inv. 27492.

—★—

Murro Soap Award

Murro Chemical Co., Portsmouth, Va., won the award on grit soap with the low bid of 11.8 cents in a recent opening for miscellaneous supplies by the Federal Supply Service, Atlanta. May 31, inv. 26777-A.

—★—

FSS Soap Awards

In a recent opening for miscellaneous supplies by the Federal Supply Service, Atlanta, the awards on soap went to the following low bidders: New South Mfg. Co., Atlanta, item 1, 18,360 pounds, 82.3 cents; Murro Chemical Co., Portsmouth, Va., item 2, 55,008 packages, 11.6 cents; Baird & McGuire, Inc., Holbrook, Mass., item 3, $2.40; Harley Soap Co., Philadelphia, item 4, 7.7 cents; Procter & Gamble Co., Cincinnati, item 5, 315 pounds, 23.9 cents; J. Eavenson & Sons, Camden, N. J., item 6, 7,068 pounds, 11.09 cents. June 10, inv. 27505.

—★—

Low Soap Chips Bid

Fitzpatrick Bros., Inc., Chicago, submitted the following low bids on laundry soap chips in a recent opening for miscellaneous supplies by the Federal Supply Service, Chicago: item 1a, 7.73 cents, item 1b, 7.6 cents, item 2a, 8.13 cents, item 2b, 7.6 cents, item 3a, 7.95 cents, item 3b, 7.6 cents. May 31, inv. WCH-82868.

—★—

Low FSS Soap Bids

In a recent opening for miscellaneous supplies by the Federal Supply Service, Kansas City, Mo., the following low bids on soap were submitted: Fitzpatrick Bros., Inc., Chicago, item 1, 8.58 cents; J. Eavenson & Sons, Inc., Camden, item 2, 14 cents; Stahl Soap Corp., Brooklyn, item 3, 10.42 cents. May 31, inv. KC-38805.

—★—

Low C-P Soap Bids

Colgate-Palmolive Co., Jersey City, submitted the low bid of 8.5 cents on soap in a recent opening for miscellaneous supplies by the Federal Supply Service, New York. In another opening for soap by the same agency Colgate submitted the low bid of 8.03 cents. June 1, inv. 62074. June 8, inv. 63002.

—★—

Low Laundry Soap Bid

Old Dominion Paper Co., Norfolk, Va., submitted the low bid of 5.398 cents on 81,000 pounds of laundry bar soap in a recent opening for miscellaneous supplies by the Federal Supply Service, Chicago. May 24, inv. WCH-92342.

—★—

Soap Award to Purity

Purity Soap & Chemical Co., Minneapolis, won the award on laundry soap with the low bid of $1.07 in a recent opening for miscellaneous supplies by the Federal Supply Service, Kansas City, Mo. June 20, inv. KC-39181.

American Distilled Oils

Produced at our Brooklyn Factory

OILS

CLOVE	BALSAM PERU	OPOPONAX
NUTMEG	CELERY	PIMENTO
ORRIS LIQUID, Conc.	GERANIOL	OLIBANUM
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RESIN LIQUIDS

OLIBANUM		STYRAX
LABDANUM		BALSAM PERU
OPOPONAX		BALSAM TOLU
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Established 1885

NEW Trade Marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12(a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the *Gazette*. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of $25 must accompany notice of opposition.

White King—This for detergent in liquid form for household use. Filed Aug. 17, 1954 by Los Angeles Soap Co., Los Angeles. Claims use since July 13, 1954.

lazi-glaze—This for automobile polish and cleaner. Filed Nov. 19, 1954 by Sears, Roebuck and Co., Chicago. Claims use since on or about Apr. 21, 1953.

Kan Kil—This for insecticide. Filed Aug. 12, 1954 by Colgate-Palmolive Co., Jersey City, N. J. Claims use since May 27, 1954.

Pax—This for soaps and detergents. Filed July 30, 1953 by G. H. Packwood Mfg. Co., St. Louis. Claims use since 1932.

Dearborn—This for cleaners in liquid emulsion, solid, and powdered form. Filed Aug. 25, 1953 by Dearborn Chemical Co., Chicago. Claims use since May 4, 1953.

Fuel Proof — This for antifreeze, and carburetor cleaner. Filed May 7, 1954 by Wynn Oil Co., Azusa, Calif. Claims use Mar. 1, 1954.

Quik—This for tire cleaning preparation. Filed Aug. 26, 1954 by Southern Chemical Products Co., Macon, Ga. Claims use since Dec. 10, 1953.

Fuller's Quality — This for soaps and all-purpose cleaner. Filed Nov. 8, 1954 by Fuller Products Co., Chicago. Claims use since July 1, 1936.

first—This for emulsion floor wax. Filed July 23, 1954 by Piatt & Smillie Chemicals, Inc., St. Louis. Claims use since Apr. 15, 1954.

Spra-On—This for liquid preparation for cleaning and polishing floors, woodwork and furniture. Filed Aug. 2, 1954 by V. Jack Vincent, doing business as Pur-O-Zone Chemical Co., Lawrence, Kans. Claims use since Mar. 1, 1942.

hard top—This for waxes and polishes. Filed Nov. 23, 1954 by Hard Top Co., Boston. Claims use since Nov. 3, 1954.

manco Denver—This for insecticides, rodenticides, weed killers, plant fungicides, and domestic disinfectants. Filed Oct. 28, 1953 by Harold Mankoff, doing busines as Manco Chemical Co., Denver. Claims use since Mar. 27, 1950.

Lurex—This for rodenticides. Filed Mar. 19, 1954 by d-Con Co., Chicago. Claims use since Jan. 12, 1951.

germ-X—This for disinfectants and deodorant in liquid form. Filed Aug. 2, 1954 by V. Jack Vincent, doing business as Pur-O-Zone Chemical Co., Lawrence, Kans. Claims use since August 13, 1947.

Arab U-Do-It—This for insecticides. Filed Aug. 17, 1954 by Federal Chemical Co., Indianapolis. Claims use Since June 1, 1951.

Arab—This for roach killer, and moth proofing compounds. Filed Aug. 17, 1954 by Federal Chemical Co., Indianapolis. Claims use since Nov. 1, 1930.

Raponex—This for rat and mouse bait. Filed Sept. 17, 1954 by Hydroponic Chemical Co., Copley, O. Claims use since Sept. 1, 1954.

Vapourri — This for scented household deodorant spray. Filed Sept. 21, 1954 by Claire Burke, Charlottesville, Va. Claims use since Jan. 1954.

Coppersote—This for wood preservative. Filed Sept. 21, 1954 by Georgia-Carolina Oil Co., Macon, Ga. Claims use since Aug. 18, 1947.

Gulfmist—This for aerosol deodorizer. Filed Nov. 19, 1954 by Gulf Oil Corp., Pittsburgh. Claims use since on or about Dec. 29, 1952.

Sunny Sol—This for liquid starch. Filed Dec. 3, 1954 by John Wiley Jones, doing business as John Wiley Jones Co., Caledonia, N. Y. Claims use since Nov. 15, 1954.

Hydrin—This for water-soluble rust inhibitor. Filed Dec. 8, 1954 by Nox-Rust Chemical Corp., Chicago Claims use since Nov. 8, 1954.

Jonsol—This for aerosol air deodorizer. Filed Dec. 23, 1954 by Johnson Laboratories, Olney, Md. Claims use since Nov. 15, 1950.

Air Hostess—This for cream and liquid shampoos. Filed Feb. 23, 1954 by Amole, Inc., Dayton, O. Claims use since Dec. 4, 1953.

Vista — This for liquid glass cleaner for household uses. Filed Mar. 19, 1954 by Simoniz Co., Chicago, Claims use since Feb. 1, 1954.

He Man—This for shampoo and toilet soap. Filed June 2, 1954 by James L. Younghusband, Chicago. Claims use since Apr. 29, 1954.

Buck's—This for hair oil shampoo. Filed June 23, 1954 by F. E. Buchanan, Fort Worth, Texas. Claims use since Jan. 1, 1953.

Ink Out—This for ink and stain remover. Filed Sept. 10, 1954 by Cardinell Corp., Montclair, N. J. Claims use since on or about Mar. 19, 1954.

Silver Rain—This for shampoo. Filed Sept. 20, 1954 by Gillette Co., doing busines as The Toni Co., Boston, Claims use since Aug. 44, 1954.

Luse's Lo-Suds—This for laundry detergent used in washing machines. Filed Sept. 28, 1954 by Wm. K. Luse, doing business as Wm. K. Luse & Co., Lakeview, O. Claims use since Jan., 1950.

PCB-100—This for powdered hand soap. Filed Nov. 12, 1954 by Borax Consolidated, Ltd., doing business as Pacific Coast Borax Co., Div., Los Angeles. Claims use since June 9, 1954.

Vibra-Clean—This for hand and skin cleaner. Filed Nov. 12, 1954 by Hanlon Chemical Co., Kansas City, Kans. Claims use since Nov. 1954.

La Marick—This for shampoos in cream and liquid form. Filed Nov. 26, 1954 by Lamarick Beauty Products Inc., Charlotte, N. C. Claims use since Feb. 28, 1952.

Banafly—This for insecticides and fly repellent in spray form. Filed July 27, 1953 by American Scientific Laboratories, Inc., Madison, Wisc. Claims use since July 7, 1952.

Sucro-Wax — This for vegetable wax for use in the manufacture of shoe polishes and furniture polishes. Filed Mar. 9, 1954 by Sucro-Wax, Inc., Wilmington, Del. Claims use since on or about Mar. 3, 1954.

Sanitabs—This for sanitizing and disinfecting agent in tablet form. Filed Dec. 7, 1954 by Chemical Research Products Co., Norfolk, Va. Claims use since Dec. 16, 1950.

Chieftain—This for chlorinated lime adapted for use in bleaching, deodorizing, and disinfecting. Filed Dec. 10, 1954 by H. M. Sinclair, Jr., trustee for Sinclair Mfg. Co., Toledo. Claims use since Sept. 1911.

Soft'n'white — This for rinse for washable fabrics after washing cycle and before drying. Filed Dec. 20, 1954 by Soft'N'White, Inc., Akron, O. Claims use since Oct. 30, 1954.

Pure Magic—This for fabric bleach. Filed Jan. 21, 1955 by Pure Magic, Inc., Buffalo, N. Y. Claims use since Jan. 3, 1955.

Swish-O-Dish—This for dishwashing tool incorporating a sponge and hollow handle for holding a liquid detergent. Filed Jan. 11, 1954 by Mills Sales Co., Los Angeles. Claims use since Mar. 1953.

Floats Off—This for synthetic liquid detergent for cleaning all types of floors and wall surfaces. Filed Dec. 21, 1953 by J. I. Holcomb Mfg. Co., Indianapolis. Claims use since Dec. 26, 1950.

leather-nu—This for composition for cleaning leather. Filed Jan. 21, 1954 by Quality Chemical Products Corp., Chicago. Claims use since Jan. 2, 1954.

Nixx—This for waterless hand cleaner having incidental skin softening qualities. Filed Feb. 11, 1954 by Jingle Products Corp., Chicago. Claims use since Mar. 25, 1950. Subj. to intf. with Reg. No. 569,938.

Clevermaid—This for chemical cleaner and disinfectant for household use. Filed Mar. 10, 1954 by Apex Chemical Co., Apex, N. C. Claims use since Oct. 21, 1953.

Rootaway—This for chemical compound used as a sewer cleaner. Filed Apr. 13, 1954 by Camp Chemical Co., Brooklyn, N. Y. Claims use since Mar. 1, 1948.

Cotton Brite—This for cleaning compound. Filed May 17, 1954 by Wade, Wenger & Associates, Inc., Chicago. Claims use since May 15, 1953.

Sopourri—This for soap. Filed Sept. 17, 1954 by Claire Burke, Charlottesville, Va. Claims use since June 1953.

Chariot — This for cleaning and washing materials and compounds for automobiles and trucks, and vehicles. Filed Sept. 27, 1954 by Abso-Clean Chemical Co., Detroit. Claims use since Mar. 1, 1947.

delete—This for rust and stain remover. Filed Nov. 17, 1954 by Judson Dunaway Co., Dover, N. H. Claims use since Apr. 13, 1954.

Solar—This for liquid deter-

(*Turn to Page* 114)

DOW

AVAILABLE SOON

soda ash

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Ready for your needs shortly . . .

A high-quality and uniform *soda ash* . . .

Produced by an exclusive new Dow process.

More details will appear soon . . .

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Include Dow in your planning.

THE DOW CHEMICAL COMPANY, Midland, Michigan

you can depend on DOW CHEMICALS

DOW

News

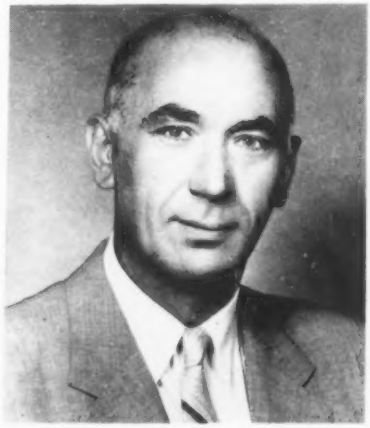
New Stepan Vice-Presidents

Stepan Chemical Co., Chicago, appointed David B. Hatcher as vice-president and general manager,

David B. Hatcher

and William von Dielingen as vice-president in charge of production, it was announced last month by Alfred C. Stepan, president. Both men also become directors of the company.

Dr. Hatcher, general manager of Stepan since 1951, was previously associated with the resin division of Libby-Owens-Ford



William von Dielingen

Glass Co., Toledo, O. With Stepan for the past 20 years, Mr. von Dielingen has been superintendent of production for the synthetic detergent firm.

Whiteford P&G Director

The board of directors of Procter & Gamble Co., Cincinnati, last month elected William K.

William K. Whiteford

Whiteford, president since 1953 of Gulf Oil Corp., Pittsburgh, as a new director. Mr. Whiteford fills the vacancy created by resignation from the board of Floyd M. Barnes, a director of P&G since 1934. Mr. Barnes, who is 78, joined the firm in 1899, became chief clerk in the traffic department in 1901, was placed in charge of all fats and oils purchases of the company in 1917. In 1920 he became responsible for supervision of all P&G purchases and organized the general buying department in which all of the firm's purchases are centralized. Mr. Barnes was elected a vice-president in 1931.

Mr. Whiteford, 54, has spent his entire business career in the petroleum industry. Prior to his appointment as Gulf Oil president he was chairman of the board of British-American Oil Co., Toronto.

At the same time the board elected C. K. McCracken, chief accountant since 1942, to the new position of company comptroller and D. P. Fite, former accounting department head, as assistant secretary of the company and chief accountant, to succeed Mr. McCracken.

Mt. Hood Soap Expands

A new glycerine plant is being added to existing facilities by Mount Hood Soap Co., Portland, Ore., it was announced last month by Henry Feldman, president. Investment in the addition will run to approximately $75,000.

—★—

Barbasol in Merger

Barbasol Co., Indianapolis, and Lucky Tiger Manufacturing Co., Kansas City, Mo., merged their sales forces, it was announced recently. Barbasol makes shaving products and Lucky Tiger is a manufacturer of shampoos and related products.

—★—

McDowell Leaves N. Coast

O. S. McDowell, president of North Coast Chemical & Soap Works, Seattle, has sold his interest in the firm it was announced last month. Prior to becoming president three years ago, Mr. McDowell had been vice-president in charge of sales for eleven years. He joined the firm 24 years ago. His future plans have not yet been announced.

—★—

Oronite in French Venture

Oronite Chemical Co., San Francisco, in conjunction with four French oil companies has set up a detergent firm in France, it was announced recently. The new concern is called "Petrosynthese" and will produce and distribute syndets. Its annual capacity is placed at 24,000 tons of dodecylbenzene, to be produced from domestic raw materials.

—★—

New Oakite Products

Oakite Products, Inc., New York, has a new acidic barrel finishing compound, a new alkaline derusting and heat scale removing compound, and a product designed to strip zinc chromate primer from an aluminum surface. Oakite will introduce these new items at the Production Engineering Show in Chicago, Sept. 6 through 16.

NO MIXING "HEADACHES"

WHEN YOU'RE USING ORVUS AB GRANULES!*

*An unusually efficient synthetic detergent of the alkyl aryl sulfonate type.

What's more irritating—or costly—than a detergent which breaks down and turns to dust when you start mixing it with other ingredients? Or that insists on layering, sifting, or settling out?

The unusual granule characteristics of Orvus AB eliminates such mixing "headaches." Unlike many "blown" products, Orvus AB Granules resemble miniature sponges rather than hollow spheres. Because of this, you get minimum stratification, sifting or settling when Orvus AB goes into your mixers. *And you get more uniform mixtures!*

Orvus AB has exceptional detergent, sudsing, wetting, dispersing and emulsifying properties. It blends readily and intimately with other ingredients—an essential for the converter. For information regarding specific applications and formulas incorporating Orvus AB Granules mail a postcard to

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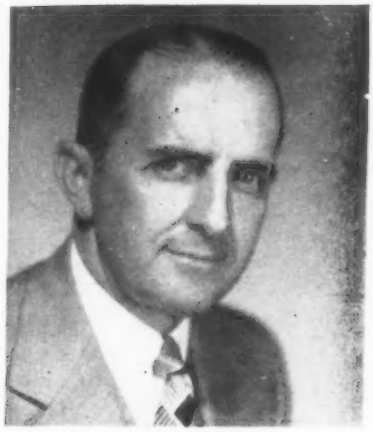
AB GRANULES

Procter & Gamble

BULK SOAP SALES DEPARTMENT
P. O. BOX 599
CINCINNATI 1, OHIO

America's largest manufacturers of soaps and synthetic detergents.

Colgate Elects W. L. Sims as President



William L. Sims II

THE election of William Lee Sims II as president of Colgate-Palmolive Co., Jersey City, N. J., was announced in mid-July by E. H. Little, chairman of the board, who continues as chief executive officer of the company. Mr. Sims succeeds Joseph H. McConnell, who last May resigned as president of the firm which he had headed for two years.

Ralph A. Hart has been elected vice-president of Colgate-Palmolive Co. and also has been chosen to succeed Mr. Sims as president of Colgate-Palmolive International.

The new Colgate president has been associated with the firm since 1924, when he joined the company as a salesman. He has been vice-president in charge of the company's foreign operations since 1945 and executive-vice-president since 1952. He became a director of the company in 1946 and a member of the executive committee in 1953.

Mr. Sims was manager of the company's subsidiary in Italy from its formation in 1927 until 1930, when he was placed in charge of 10 subsidiaries in continental Europe, with headquarters in Paris. After returning to the United States in 1940, following the outbreak of World War II, he became assistant to Mr. Little, who was then president of the company.

During 1943 and 1944 Mr. Sims served with the Office of Price Administration as head of its chemical and drug unit in Washington, D. C. Upon returning to the company in 1945, he was elected vice-president in charge of the company's foreign operations.

When Colgate-Palmolive International was formed in 1953, Mr. Sims became its first president, continuing as executive vice-president of the parent company. The international operations are carried on through 28 subsidiaries, five branches and an export department, and employ about 12,000 persons outside the United States. Foreign sales have increased from $41,000,000 in 1945 to $162,500,000 in 1954.

Mr. Hart started with the Colgate-Palmolive organization in 1932 as a salesman for its Canadian subsidiary in Toronto, advancing to the position of vice-president in charge of sales and advertising of that subsidiary. He also has served as managing director of Colgate-Palmolive subsidiaries in Australia and India, and most recently as vice-president of Colgate-Palmolive International in charge of European sales and advertising.

Mr. Sims is a native of Birmingham, Ala. Both he and Mr. Hart live in Short Hills, N. J. Mr. Sims also maintains a home in Orlando, Fla.

— ★ —

Toronto Soaper Expands

Taylor Soaps-Perfumes Ltd., Toronto toilet soap manufacturer, is building a new 10,000 square foot plant, it was announced last month. The Taylor family has been making fine soaps in Canada since 1865. The new facilities will greatly increase the firm's production capacity.

— ★ —

Queen Honors Heyworth

Sir Geoffrey Heyworth, chairman of Unilever, Ltd., is one of the four new barons announced in the Queen's Birthday Honors list in June. Sir Geoffrey went with Lever Brothers at Liverpool in 1912. From 1915 to 1918 he served with the Canadian Army. He returned to Lever and served in various capa-

Sir Geoffrey Heyworth

cities in the United Kingdom and in Canada until 1931 when he became a director of the parent company, Lever Brothers, Ltd., now Unilever Ltd. In 1942 he succeeded the late Sir Francis D'Arcy Cooper as chairman of the company.

— ★ —

Three New Syndets

Three additions to its "Alkaterge" line of surfactants were announced last month by Commercial Solvents Corp., New York. Available in commercial quantities, "Alkaterge-A," "Alkaterge-E," and "Alkaterge-T" are cationic nitroparaffin derivatives suggested as auxiliary emulsifiers, dispersants, corrosion inhibitors and for a number of other industrial uses.

CSC says that its plant at Sterlington, La., is the world's first commercial plant for the production of nitroparaffins. The unit is scheduled to go into production this month.

— ★ —

AMA Elects Mueller VP

Robert K. Mueller, vice president of Monsanto Chemical Co., St. Louis, Mo., and general manager of the firm's plastics division, has been elected a divisional vice-president of the American Management Association, it was announced recently. Mr. Mueller will be in charge of AMA's manufacturing division.

WYANDOTTE CHEMICALS

What do you look for when you buy caustic?

Generally speaking, caustic soda is a standard, commodity item. However, it's not exactly the same wherever you buy it.

Many formulators prefer *Wyandotte* Caustic – for its high quality, and high degree of uniformity. Also, Wyandotte anhydrous grades are exceptionally free flowing.

But other factors enter in, too.

As one of the oldest producers of caustic soda in America (1895), formulators not only look to us as their source of supply for caustic, but also have come to depend upon us for advice pertaining to caustic – its handling and processing.

For example, we have designed complete caustic- and chlorine-handling systems for bleach manufacturers. We've laid out storage and handling facilities for caustic in the soap, paper, textile, and chemical-processing industries – to name a few. We have been called upon, from time to time, to assist users in their safety programs. For buyers of liquid caustic, we have made comprehensive individual studies to determine if savings could be effected by changing from 50% to 74% concentration.

Perhaps we can assist you in similar ways.

To help you get better acquainted with the Wyandotte caustic story, we've prepared a 60-page book on the subject. A copy is yours for the writing. Why not write today? *Wyandotte Chemicals Corporation, Dept. SCS-2, Wyandotte, Michigan. Offices in principal cities.*

Wyandotte CHEMICALS

BLEACHING AGENTS • CARBOXYMETHYLCELLULOSE • CAUSTIC SODA • CALCIUM CARBONATE • CALCIUM CHLORIDE • CHLORINE • DETERGENTS (NONIONIC AND ANIONIC) • EMULSIFYING AGENTS • SODA ASH • SODIUM BICARBONATE • SOLVENTS (CHLORINATED) • WATER SOFTENERS • WETTING AGENTS

Lentheric Names Two

William G. Ohme, former advertising manager, has been named director of marketing of the

W. G. Ohme

F. Q. Swackhamer

Lentheric Division of Olin Mathieson Chemical Corp., New York, it was announced last month by Jack H. Mohr, general manager of the division. With Lentheric since 1952, Mr. Ohme was previously assistant treasurer and assistant secretary of Richard Hudnut, New York.

Frederick Q. Swackhamer's appointment to succeed Mr. Ohme as advertising manager of the division was announced at the same time. He had been with Donahue & Coe, New York advertising agency, for the past four years.

—★—

Britain Frees Glycerine

Trading of glycerine in Britain has been decontrolled, it was announced recently. Controls had been in effect since the war. In future supplies may be ordered from regular sources of supply without the necessity of securing a permit.

—★—

Improved "Ninol" Series

Ninol Laboratories, Inc., Chicago, introduced recently a new series of amine condensates with an amide content of 90 to 95 percent. Called the "Ninol Extra" series, this line exhibits improved stabilizing and thickening properties, is particularly suitable for use in shampoos, dishwashing detergents, laundering compounds, etc., the company claims.

The new series results from a modification of the basic process first described in Ninol patent No. 2,089,212, which teaches the synthesis of detergents from fatty acids and ethanolamines.

Heads New Sindar Dept.

Establishment of a market development department was announced last month by Sindar Corp., New York. A. T. Fiore has been appointed manager of the new department. He has been with the parent company more than 20 years.

— ★ —

Shell British Chemical Unit

Shell Petroleum Co. in England announced last month the formation of Shell Chemical Co., Ltd. The new company will handle all Shell chemical manufacturing and marketing activities in the United Kingdom and in Eire. Petrochemicals Ltd., recently acquired by Shell Petroleum, will become a wholly owned subsidiary of the organization.

— ★ —

Lever Advances Hayward

Clyde Hayward has been advanced to assistant research director—technical services, of the research and development center at Edgewater, N. J., by Lever Brothers Co., New York. The announcement was made last month by L. B. Parsons, vice-president in charge of the research and development division.

With Lever since 1946, Mr. Hayward's most recent position was that of senior research associate in the product improvement and development department. In his new post he succeeds G. Webb Rogers, who has been assigned to a new position in Levers operations analysis department.

Clyde Hayward

WYANDOTTE CHEMICALS

. . . who do you look to for technical assistance?

You do not have to be a carload user – or even buy direct from Wyandotte – to get the benefits of our technical assistance. For we have a complete network of very capable distributors, strategically located throughout the United States.

Each has been selected because of his background and experience in selling allied products – and for his ability to serve less-than-carload buyers of chemicals. Each is familiar with the many uses of caustic, the grades available, and their proper handling.

Should the need arise, Wyandotte's own technical assistance is available to you through these distributors. Of course, if you are buying caustic direct from us, Wyandotte's technical assistance is as close to you as your telephone. *Wyandotte Chemicals Corporation, Technical Inquiry Section, Wyandotte, Michigan. Offices in principal cities.*

Innovation in packaging— *the open-head drum. Rolled edges protect user from cuts and caustic burns. Easier to scoop out or empty; tight-fitting lid prevents moisture pickup.*

Wyandotte CHEMICALS

HEADQUARTERS FOR ALKALIES

Take the surgeon's word for it...

Your best protection against infectious bacteria is a soap or detergent containing... **G-11®**

(Brand of Hexachlorophene)

Today virtually *all* surgeons and hospitals insist on soaps and cleansers containing G-11!

More and more meat and food producers are specifying soaps and detergents with G-11 for use throughout their plants.

Millions of consumers in home and industry are *demanding* the extra protection and health benefits provided by products containing G-11.

Here is convincing proof that G-11 offers efficient, safe, effective protection against infectious bacteria . . . helps you and your personnel maintain a cleaner, healthier establishment.

Contact your supplier now for liquid, powder and bar soaps containing G-11.

Those who depend on you for guidance will look to you for more information on G-11. We will gladly supply you with more detailed data.

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Bates Solvay President

The appointment of Carlton Bates as president of Solvay Process Division of Allied Chemical & Dye Corp., New York, effective July 1, was announced recently. He has been executive vice-president of Solvay Process Division since 1952. Mr. Bates succeeds A. B. Chadwick, who is retiring after 44 years with the firm.

Carlton Bates

Mr. Bates has been with Solvay since 1916, when he started in the Syracuse plant laboratory as a chemist. In 1920, after serving in World War I, he became assistant manager of caustic soda and bicarbonate of soda operations. From 1922 to 1934, Mr. Bates was successively manager of the bicarbonate of soda plant, supervisor of the soda ash section, and assistant manager of the Syracuse and Detroit plants. He managed the Baton Rouge, La., plant for 11 years and in 1945 was made director of operations.

The retiring president of Solvay Process Division, A. B. Chadwick, was employed by Semet-Solvay in 1911 at its Waukegan, Ill., plant. In 1917, he was transferred from Semet's coke plant at Geneva, N. Y., where he had been superintendent since 1915, to Solvay Process at Syracuse. Mr. Chadwick became general superintendent at Syracuse in 1927, assistant director of operations in 1929, and a year later was appointed vice-president. He became president of Solvay Sales and executive vice-president of Solvay Process Apr. 1, 1945. In 1950, he was appointed president of Solvay Process.

—★—

d'Aigremont in Europe

Jacques d'Aigremont, left last month for a two month's stay in France. He will visit the laboratories of the firm's principles in Grasse and Paris to discuss developments in the essential oil, aromatic chemicals and perfume fields.

—★—

Detergent concentrates and a wide range of soap products under private label for distribution through sanitary supply distributors are now being produced at new plant of Essential Chemicals Co. of Milwaukee, at its recently acquired plant at Fredonia, Wis. Operations continue in Milwaukee, where executive offices are located.

Hooker Names Trimble

Thomas H. Trimble has been appointed manager of public relations for Hooker Electrochemical Co., Niagara Falls, N. Y., it was announced recently by R. Wolcott Hooker, vice-president. Mr. Trimble came to Hooker in 1935, following his graduation from Princeton University. After a number of years in various sales positions he aided in the formation of Hooker's public relations department in 1953 under the direction of Mr. Hooker.

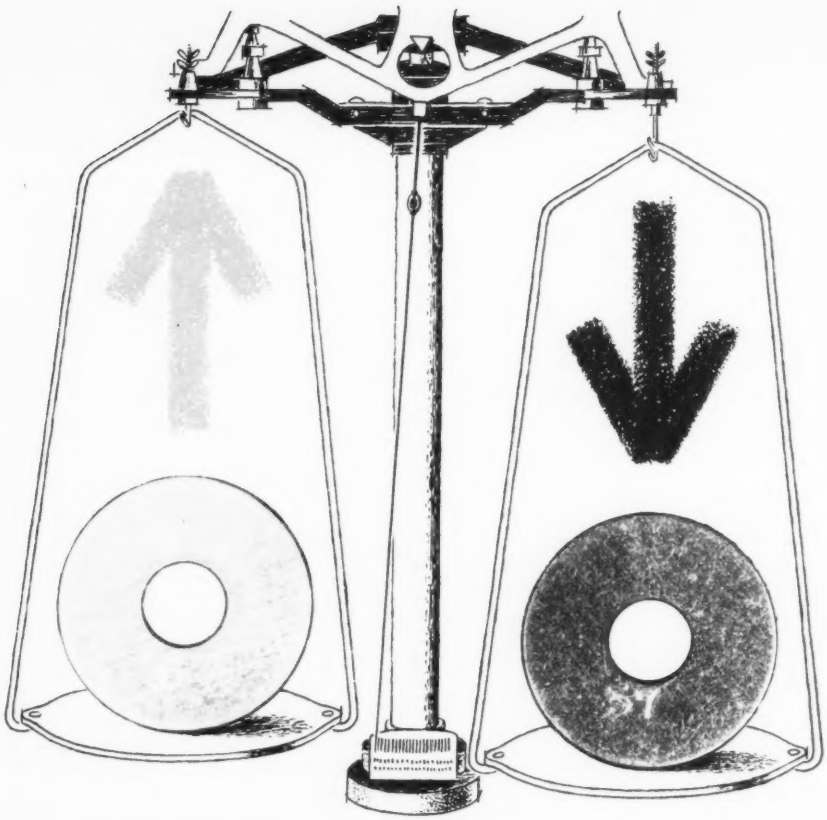
Thomas H. Trimble

—★—

Koeppen in New Coty Post

Coty, Inc., New York, recently announced appointment of Lester Koeppen as assistant sales manager. He was formerly Coty's southwestern district manager.

HOW PQ SILICATES PROTECT ALUMINUM



EFFECT ON ALUMINUM OF DETERGENT SOLUTIONS AT INDICATED CONCENTRATIONS

0.06% Alkyl-Aryl Sulfonate Plus 0.06% Phosphate Plus Silicate

Weight Loss in MG. per SQ. DM. in Two Hours at 60° C.

	Sodium Tripolyphosphate			Tetrasodium Pyrophosphate		
	No Silicate	0.012% Silicate	0.06% Silicate	No Silicate	0.012% Silicate	0.06% Silicate
Alkyl-Aryl Plus Phosphate	53 MG			32 MG		
N Silicate Na_2O:3.22 SiO_2	53 MG	1 MG	None	32 MG	None	None
RU Silicate Na_2O:2.40 SiO_2	53 MG	3 MG	None	32 MG	1 MG	1 MG
B-W Silicate Na_2O:1.60 SiO_2	53 MG	4 MG	None	32 MG	1 MG	None

LEFT — Washed with 0.06% alkyl-aryl sulfonate plus 0.06% sodium tripolyphosphate without silicate; weight loss 53 MG per SQ.DM. **RIGHT** — Washed with 0.06% alkyl-aryl sulfonate plus 0.06% sodium tripolyphosphate plus 0.06% silicate; **no weight loss.**

PQ silicates of soda used in detergent formulations with alkyl-aryl sulfonate and sodium tripolyphosphate or tetrasodium pyrophosphate reduce attack of these mixtures on aluminum. How well PQ silicates work for you is measured by weighing the aluminum washed in synthetic detergents with and without silicate. Note from the table, the striking protection you get with any of the siliceous PQ silicates.

Ask for a copy of recent studies "Silicates as Corrosion Inhibitors in Synthetic Detergent Mixtures".

PQ SOLUBLE SILICATES
METSO DETERGENTS
PHILADELPHIA QUARTZ COMPANY
1152 Public Ledger Bldg., Phila. 6, Pa.

TRADEMARKS REG. U.S. PAT. OFF.

P Q WORKS: *Anderson, Ind., Baltimore, Md., Chester, Pa., Gardenville, N. Y., Jeffersonville, Ind., Kansas City, Kans., Rahway, N. J., St. Louis, Mo., Utica, Ill.*
ASSOCIATES: Philadelphia Quartz Co. of California, PLANTS: Berkeley & Los Angeles, California, Tacoma, Wash. National Silicates Limited, Toronto, Canada

Reverses Detergent Liability Ruling

REVERSING an earlier ruling by a lower court that a detergent maker was guilty of negligence in advertising because he stated his product was "kind to hands," the Appellate Term of the New York Supreme Court handed down a decision regarded by some as of far-reaching importance.

The Appellate Court recently held that the City Court of New York had erred in basing liability upon negligence in advertising by Procter & Gamble Co., Cincinnati, on behalf of its product "Tide." The plaintiffs, Mr. and Mrs. Joseph W. Lehner, had claimed hand injury due to using "Tide," in a suit instituted on March 30, 1953. The plaintiffs asserted that the detergent which was alleged to be inherently dangerous and poisonous, had caused damage to the skin. The Lehners claimed damage of $57,500. In the City Court of New York, Judge Picariello, who presided without jury, held that television advertising of "Tide" as "kind to hands" was a wrongful act for which the maker was liable. Damages of $4,500 were awarded to Mrs. Lehner and $1,000 to Mr. Lehner.

The upper court in reversing the lower court's ruling and ordering a new trial, pointed out that the plaintiff did not establish the product was harmful or inherently dangerous. It further stated:

"The ground of liability found below was negligence in defendant's advertising, in either assuring the public that the use of its product involved no risk or failing to warn of its potential danger. That issue was, however, not fairly tendered nor fully tried. Such negligence can be established only by proof of knowledge by defendant of potential danger to a number of persons in using its product. We do not hold that mere redness of hands acquired by a small percentage of those tested by defendant (Procter & Gamble) unassociated with any form of dermatitis is sufficient by itself to put defendant on notice of possible danger to users of its product. A new trial of all the issues should be had in the interests of justice."

Judge Picariello found no evidence to indicate that "Tide" was inherently dangerous or poisonous but felt the plaintiff had sustained the burden of proof in establishing that the defendant in advertising its product as "kind to hands" was negligent; in that the defendant as a result of extensive tests knew such was not the fact. His basis for such a remark was testimony elicited from a defendant's witness that under certain test conditions 20 out of 300 persons showed "redness of hands" after being exposed to "Tide."

According to P&G this statement, taken out of context, proved very damaging. The company also pointed out that there was no proof that "Tide" was cause of redness of hands. It was possible that 20 or 30 individuals in this group might have developed red hands before or after the tests started. In addition, the tests were conducted during the winter season when redness and chapping of hands is quite common.

The decision, according to P&G, recognizes that in her daily work the housewife may develop redness or chapping of the skin for one reason or another and that this is not attributable to any particular product or thing out of the many to which she is exposed.

—★—

Thompson in New Post

M. A. Thompson has been named eastern sales manager of Michigan Alkali Division, Wyandotte Chemicals Corp., Wyandotte, Mich., it was announced recently. With Wyandotte since 1943, he has successively served as manager of offices in Detroit and Chicago and more recently as manager of field sales for the corporation.

M. A. Thompson

In his new position Mr. Thompson is responsible for sales in the firm's largest district office and supervises sales activities in eastern New York, New England, New Jersey, Virginia, North Carolina, and eastern Pennsylvania.

—★—

New MM&R Catalog

The latest edition of price list and catalog of Magnus, Mabee & Reynard, Inc., New York, was published last month. Copies are available from the firm's advertising department at 16 Desbrosses Street, New York 13.

—★—

Hooker Earnings Rise

An increase in earnings by Hooker Electrochemical Co., Niagara Falls, N. Y., to $4,085,100 or 79 cents a share for the six months ended May 31 was reported last month. This compares with $3,215,000 or 62 cents a share during the comparable period in 1954. Sales during the reported period reached $38,900,000 against $31,700,000 in 1954.

Good progress was reported in coordinating the activities of Durez plastics division with the parent company. The new Durez plant at Kenton, O., was expected to be in production early in July.

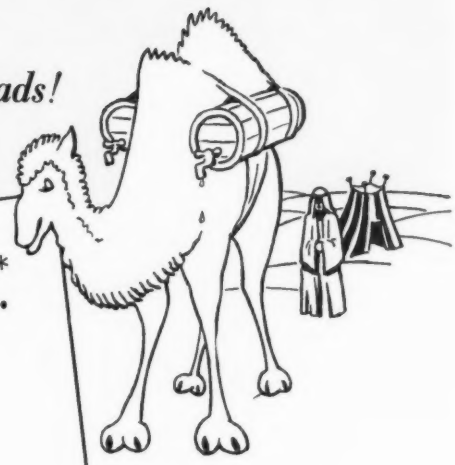
—★—

Sharples Pennsalt Division

Sharples Chemicals Inc. was dissolved as a corporation July 1 and became an operating division of Pennsylvania Salt Manufacturing Co., Philadelphia, it was announced last month by William P. Drake, president.

Pennsalt acquired Sharples through an exchange of stock in 1951. The division operates plants in Wyandotte, Mich., and Houston, Tex., and will continue its operations without change under Lee H. Clark, general manager.

Paying Freight on Water is for the Nomads!



You Can Save Over $1.00 per 100 lb.*

by using

Westvaco®

FREE-FLOWING • QUICK DISSOLVING

TRISODIUM PHOSPHATE

ANHYDROUS

(instead of T. S. P. Crystals)

If you live in a desert, it may make sense to pay for water. But in the chemical business, needless delivery charges on water is money down the drain.

On T.S.P. it can be important money, as these figures show: T.S.P. Crystals contain 56.9% water—only 43.1% anhydrous T.S.P. Thus for every 100 pounds of anhydrous Na_3PO_4 content, you pay delivery charges on 130 pounds of water. When you buy WESTVACO T.S.P. Anhydrous you pay only for active ingredient. Since the l.c.l. rate for a typical 250-mile haul is 97¢ per 100 lb.; it's easy to see how fast your savings pile up when you *don't* pay for hauling water.

You save on first cost, too. Currently, the anhydrous T.S.P. content of T.S.P. Crystals sells for $9.74; WESTVACO T.S.P. Anhydrous for $8.45—both prices f.o.b. on an anhydrous basis. This saving is *in addition to what you save on delivery costs.*

If you must use T.S.P. Crystals, we hope you are located near a producing point. If you *can* use WESTVACO T.S.P. Anhydrous, we can save you real money. A phone call or letter will bring an exact quotation. Why not find out right now?

*L.C.L. delivery 250 miles from producing point. Get an exact quote on your savings.

Westvaco Mineral Products Division

FOOD MACHINERY AND CHEMICAL CORPORATION

General Offices • 161 East 42nd Street, New York 17

CHICAGO, ILLINOIS • CINCINNATI, OHIO • HOUSTON, TEXAS • NEWARK, CALIFORNIA

fmc FOOD MACHINERY AND CHEMICAL CORPORATION

Westvaco® CHEMICALS

Wins Advertising Award

Advertising by Armour & Co., Chicago, for its "Velva-Soft" fabric softer, which turned the product from a sales failure into a profitable item, recently won two industrial advertising awards. The citations included the Putnam Award, sponsored by Putnam Publishing Co. and the National Industrial Advertisers Association for the best use of industrial advertising and the best documentation of such use in making more effective selling of product or services to industry.

—★—

Stevenson Honored

Ralph N. Stevenson, former sales manager of Givaudan-Delawanna, Inc., New York, was honored last month at an outing of the Chemical & Allied Industries Association of Michigan, for 50 "active" years in the chemical industry. Mr. Stevenson was with Givaudan from 1935 to 1948. He is currently associated with a manufacturers' agency in Detroit.

—★—

Beauty Supply Meeting

The 51st annual convention of the Beauty and Barber Supply Institute, Inc., will be held at the Statler Hotel, New York, Aug. 14 through 18. In addition to extensive business sessions, Joseph Byrne, the group's secretary, announced a varied social program. A thousand delegates are expected from all states, and from Canada, Central and South America.

—★—

DCAT Meets Sept. 22-24

The Drug, Chemical and Allied Trades Section of the New York Board of Trade will hold its 65th annual meeting at Pocono Manor Inn, Pocono Manor, Pa., Sept. 22 through Sept. 24. The meeting will open with a reception Thursday evening. The business meeting on Friday morning will hear annual reports by officers and the new executive committee will be elected. On Saturday morning the new exectuive committee will hold a special meeting to elect officers. Saturday evening a banquet will be held at which the new officers will be installed.

On hand for the presentation of the Putman Awards for "Velva-Soft" advertising were, left to right: — J. R. Herd, Armour's Soap Division general manager; Russell L. Putman, publisher of Putman; Howard H. Dismeier, Armour's Industrial Advertising supervisor and Gilbert E. Banks, product advertising supervisor; J. S. Doyle, account executive, Foote, Cone & Belding, advertising agency.

—★—

April Soap Earnings Up

Average weekly earnings in the soap industry have recovered in April from a drop in March, it was reported recently by the Association of American Soap and Glycerine Producers, Inc. The figure for April was $92.75 compared with $78.59 in March and $91.46 in February.

—★—

William Schilling, Jr., 63, an officer and secretary of Norda Essential Oil and Chemical Co., New York, died July 15. He had been associated with the firm for 25 years, and was formerly with L. A. Van Dyke Co. He served as president of the Essential Oil Association of the U. S. and the Vanilla Bean Association.

Cowles Acid Plant

Plans to construct a plant for production of organic acids were announced recently by Cowles Chemical Co., Cleveland. The plant will be located at Skaneateles Falls, N. Y., on a site adjacent to Cowles' silicate and detergent plant. The acids will be manufactured by a process described in foreign patents, to which Cowles has acquired the U. S. rights.

—★—

New Diamond Subsidiary

Diamond Alkali Co., Cleveland, recently announced formation of a new subsidiary, Diamond Chemicals of Puerto Rico, Inc., which will produce detergents and cleaning compounds. The plant, located in a suburb of San Juan, is expected to begin operations at the end of this month. It was previously owned by Miles H. Fairbank, Inc., now holder of a minority interest in the new subsidiary. Miles H. Fairbank will continue as Diamond's Puerto Rican distributor and sales representative, a post he has held since 1949. In addition he will serve as the new subsidiary's president. S. S. Savage will be chairman of the board of the subsidiary. He is president of Diamond's two export subsidiaries, Diamond Alkali Inter-American Corp. and Diamond Alkali International.

New Trade Marks

(*From Page* 101)

gent, granulated detergent, and soap. Filed Nov. 24, 1954 by Swift & Co., Chicago. Claims use since about Mar. 10, 1912, on soap.

Formula "B"—This for deodorant cleaner compound in liquid form for miscellaneous uses. Filed Mar. 24, 1955 by Henri Brousseau, Tacoma, Wash. Claims use since Feb. 10, 1950. Subj. to intf. with SN 650,597.

Gusto — This for insecticides. Filed Aug. 12, 1954 by Colgate-Palmolive Co., Jersey City, N. J. Claims use since May 27, 1954.

Dr. Trager's—This for insecticides, ammonia, bleach, household and commercial germicides, disinfectants, moth proofing products, and room deodorants. Filed Sept. 27, 1954 by Trager Mfg. Co., Scranton, Pa. Claims use since Jan. 1, 1899, on ammonia and insecticides.

ASL—This for pesticides, insecticides, rodenticides, and insect repellents. Filed Oct. 15, 1954 by American Scientific Laboratories, Inc., Madison, Wis. Claims use since May 5, 1948 for insecticides.

Sprattco—This for space deodorant and household germicide. Filed Oct. 19, 1954 by B. C. Spratt, doing business as Jack Spratt Janitor Supplies, Lubbock, Texas. Claims use since Sept. 28, 1954.

Ettore — This for squeegees. Filed Nov. 30, 1954 by Ettore Steccone, doing business as Steccone Products Co., Oakland, Calif. Claims use since October 1952.

Snow — This for dentifrice. Filed Dec. 8, 1954 by Carter Products, Inc., New York. Claims use since Nov. 14, 1954.

Nylon Snow—This for bleach-detergent for fabrics and clothing. Filed Apr. 12, 1954 by Cobb Mfg. Co., Richmond, Va. Claims use since at least as early as Feb. 15, 1953.

Benne Kleen—This for composition for cleaning and eliminating scale and corrosion, and treating boilers, tanks, etc. Filed Aug. 16, 1954 by Bennett Marine Utility, Inc., San Francisco. Claims use since May 25, 1954.

HTST—This for sodium bisulphate type cleansing powder. Filed Oct. 1, 1954 by National Soap & Chemical Co., Minneapolis. Claims use since Jan. 4, 1952.

Montego—This for shampoo. Filed Nov. 15, 1954 by Skin Tested Drug Products, Inc., New York. Claims use since Nov. 4, 1954.

Tele-Kleen—This for cleaning solution for earmolds of hearing aids, plastics, metal, and jewelry. Filed Dec. 20, 1954 by Telex, Inc., Telex Park, St. Paul, Minn. Claims use since Dec. 30, 1948.

Shining Armour—This for combined wax cleaner and polish. Filed Feb. 23, 1954 by Leonard S. Strauss, doing business as Endurance Products Co., New York. Claims use since Oct. 1, 1953.

nu-Shu—This for leather polish. Filed Nov. 19, 1954 by Nu-Shu, Inc., Dallas. Claims use since Feb. 1, 1954.

Halox—This for laundry bleach compound. Filed Feb. 17, 1955 by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since Mar. 29, 1954.

Saniterge—This for surface-active agents. Filed Feb. 17, 1955 by The B. F. Goodrich Chemical Co., Cleveland. Claims use since December 1954.

June Nelson—This for lather and brushless shaving cream, and after shave lotion. Filed May 17, 1954 by June Nelson, Inc., Wilkes-Barre, Pa. Claims use since Dec. 16, 1953.

Magic Leaf—This for metallic silverware cleaner. Filed Jan. 5, 1953 by Paul-Reed, Inc., Charlevoix, Mich. Claims use since December 1951.

Rintex—This for laundry washing compound. Filed Mar. 20, 1953 by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since Feb. 29, 1951.

Alkadip—This for compound for cleaning diesel engine, and steam locomotive parts. Filed Mar. 27, 1953 by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since July 26, 1951.

Helping Hand—This for metallic silverware cleaner. Filed July 28, 1953 by Sidney L. Caplan, Detroit. Claims use since Apr. 28, 1953.

Trend 5—This for powdered cleanser for general household use, laundries, and cleaning of dairy equipment. Filed Sept. 25, 1953 by Purex Corp., Ltd., South Gate, Calif. Claims use since Sept. 22, 1952.

Touch-and-Go—This for cleanser for household use. Filed Oct. 5, 1953 by John Goodwill Campbell, Vancouver, British Columbia, Canada.

K & W — This for cleaning and sealing compound for engine cooling system radiators. Filed Nov. 16, 1953 by Kerkling & Co., Whittier, Calif. Claims use since Jan. 1, 1946.

Phos-it—This for metal surface cleaning and pre-paint treatment compound. Filed Feb. 11, 1954 by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since July 17, 1948.

Solventique—This for paint and varnish remover. Filed Feb. 17, 1954 by Henry D. Hukill, doing business as Antique Corner, South Bend, Ind. Claims use since February 1953.

Nylon-Brite—This for bleach detergent for fabrics and clothing. Filed Apr. 12, 1954 by Cobb Mfg. Co., Richmond, Va. Claims use since at least as early as Feb. 15, 1953.

Phos-Kleen — This for sanitizing cleaning composition for use in the food processing industries, particularly the dairy trade. Filed May 11, 1954 by Pennsylvania Salt Mfg. Co., Philadelphia. Claims use since on or about Apr. 4, 1952.

No-Charm—This for powdered detergent product for cleaning motor vehicle bodies. Filed Aug. 30, 1954 by Finger Lakes Chemical Co., Etna, N. Y. Claims use since June 9, 1954.

Swell—This for liquid dishwashing compound. Filed Nov. 29, 1954 by American Alcolac Corp., Baltimore, Md. Claims use since June 14, 1954.

—— ★ ——

New Hooker Technical Men

John M. Clegg and Arthur Katchman have joined the technical staff of the research and development department of Hooker Electrochemical Co., Niagara Falls, N. Y., it was announced last month by Johannes H. Bruunn, director of research and development. Dr. Clegg has been assigned to the miscellaneous organic chemicals group and Dr. Katchman to the resins and plastics group.

—— ★ ——

Warner-Lambert to Build

Warner-Lambert Pharmaceutical Co. recently announced that it will build a new headquarters in Morris Plains, N. J., to house all administrative offices of the firm. Clearing of the site begins this month and construction is scheduled to start in September. Providing about 87,000 square feet of space, the new headquarters building will cost about two million dollars. Completion is expected in the late spring of 1956.

—— ★ ——

Foster to Olin Mathieson

William C. Foster became executive vice-president of Olin Mathieson Chemical Corp., New York, effective Aug. 1, it was announced recently by Thomas S. Nichols, president. He had been the Manufacturing Chemists' Association's first full-time president since January 1953 and resigned this position on July 31, 1955.

—— ★ ——

Wingard in New Post

Milton Rex Wingard has been named project engineer, fats and oils department, Chemical Plants Division, Blaw-Knox Co., Pittsburgh, it was announced recently. Mr. Wingard, who is located at the firm's Midwest headquarters in Chicago, is in charge of sales and contract execution on all solvent extraction activities of the fats and oils department

Medicated Soaps

(*From Page* 42)

N. J. 42, 1945.
(10) Dr. E. F. Traub, *Surg. Gen. Obst.*, 79, 205, 1944.
(11) Baer and Rosenthal, *J. Invest. Dermatology* 23:193, 1954.
(12) Drs. Marion B. Sulzberger and Frances Pascher, Dermatologic Formulary, 1953.

Chemical Specialties

Investigate . . .

If you are a manufacturer of disinfectants, insecticides, floor waxes, aerosol products, soap and detergent specialties, automotive chemicals, and kindred chemical specialties, this is a suggestion to investigate the advantages of membership in the Chemical Specialties Manufacturers Association.

For over 40 years, leaders in the industry, from the smallest to the largest, have been members of CSMA and identified with its activities. Cost of membership is low. Its services are broad and helpful. Contacts within its membership can be extremely valuable.

If your firm is eligible for membership, we shall be glad to send you full information about membership, dues, etc. Write to

H. W. HAMILTON, *Secretary*

CHEMICAL SPECIALTIES MFRS. ASSOCIATION — FOUNDED CSMA 1914

Chemical Specialties Manufacturers Association, Inc.

50 East 41st Street — New York 17, N. Y.

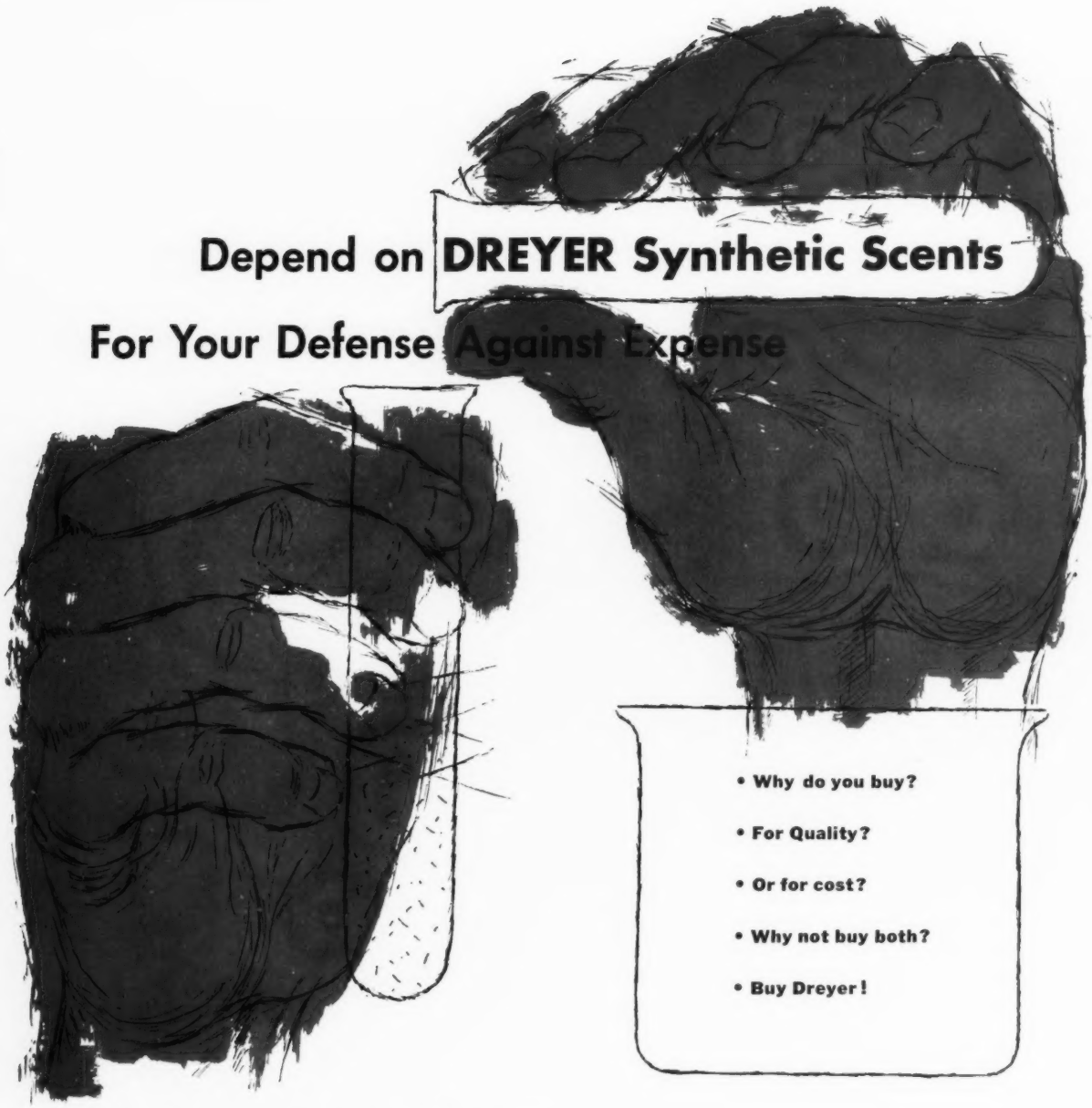
Melvin Fuld, President

Emil G. Klarmann, 1st. Vice-Pres. — Harry E. Peterson, 2nd Vice-Pres.

Peter C. Reilly, Treasurer — H. W. Hamilton, Secretary

Depend on DREYER Synthetic Scents

For Your Defense Against Expense



- Why do you buy?
- For Quality?
- Or for cost?
- Why not buy both?
- Buy Dreyer!

You get distinguished *re-creations* of natural flower odors and bouquets in all Dreyer Synthetic Floral Creations and Perfume Concentrates.

You get them at prices that pay.

Send your letterhead for free samples.

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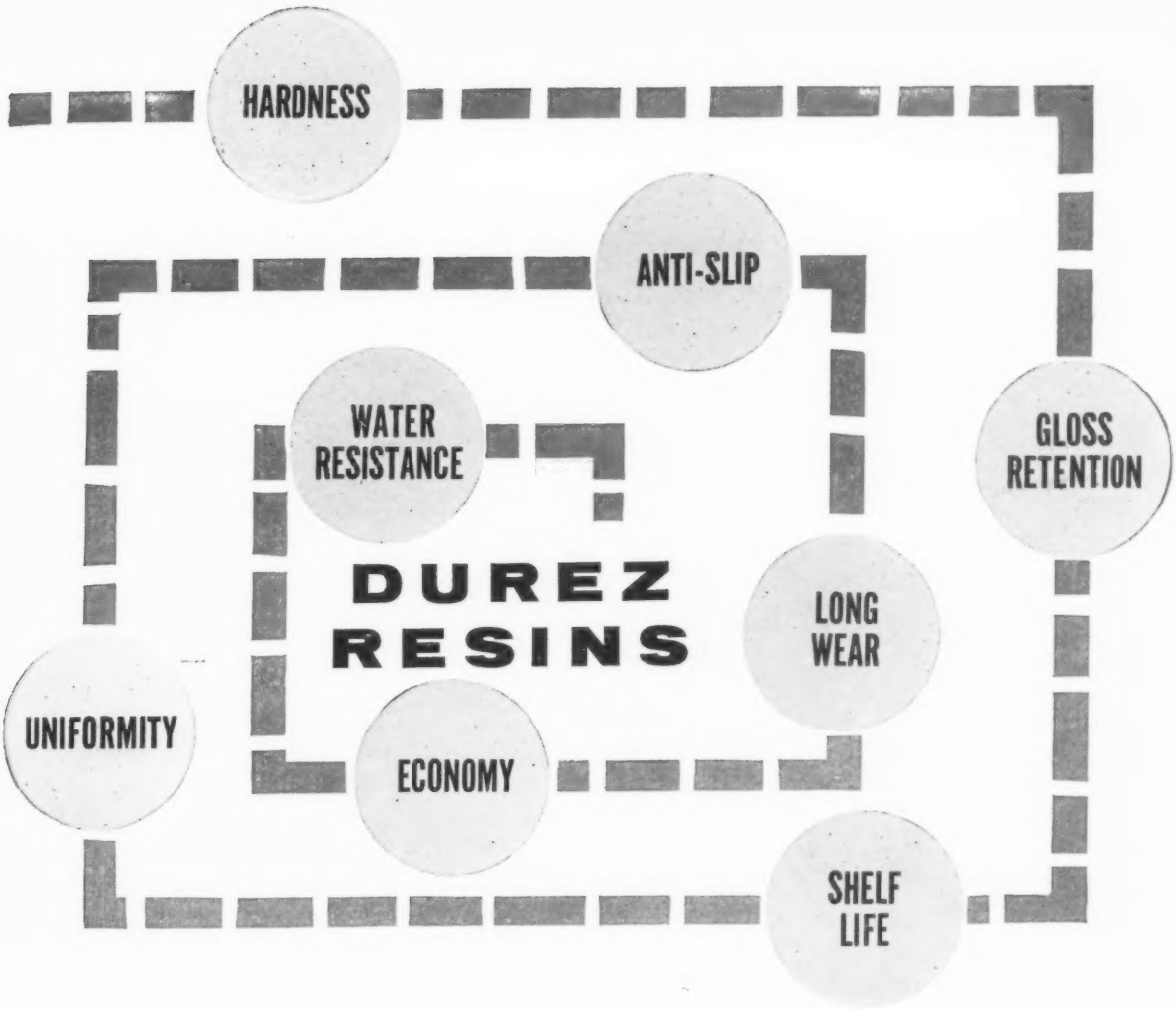
601 West 26th Street, New York 1, N. Y.

DEPEND ON

DREYER FOR

- **Flavors**
- **Essential Oils**
- **Aromatic Chemicals**

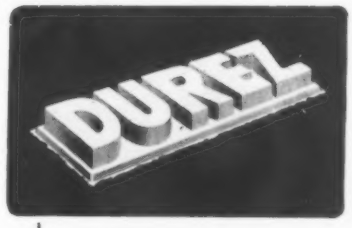


...*for* **ALL-ROUND IMPROVEMENT** *in your no-rub liquid polishes!*

Leading manufacturers have improved just about every benefit the buyer seeks in liquid wax emulsions, using blends of wax and Durez phenolic resins. Whether you're working with vegetable wax or mineral waxes, or both, we have developed resins that will successfully replace from 25% to 50% of wax in your blends. These resins are produced with basic synthetics we make ourselves, therefore you get batch-to-batch uniformity, tighter quality control, and complete dependability of supplies.

The broad experience of our Customer Service Laboratory is yours for the asking. Tell us about your requirements.

DUREZ PLASTICS DIVISION
HOOKER ELECTROCHEMICAL COMPANY
408 WALCK ROAD, NORTH TONAWANDA, NEW YORK
Export Agents: Omni Products Corporation, 464 Fourth Avenue, New York 16, N. Y.



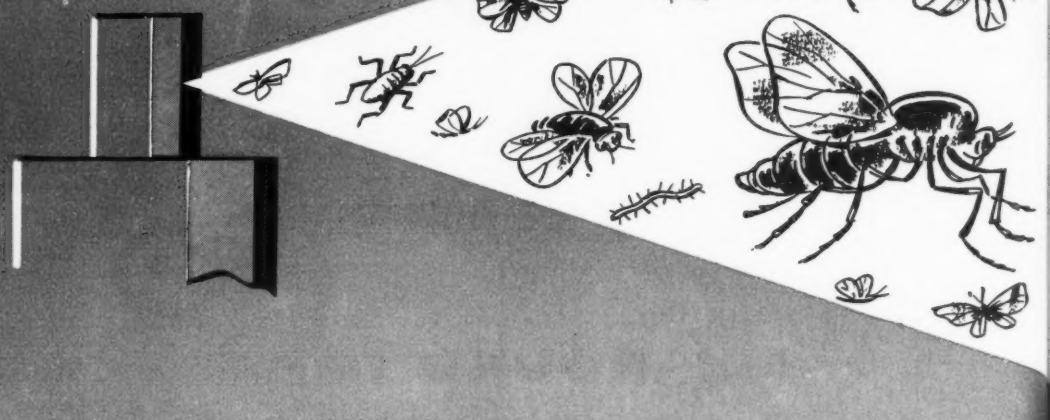
PHENOLIC RESINS THAT FIT LIQUID POLISHES
for the new era of competition

RESINS TO FIT YOUR FACILITIES

HIGH MELT. Durez 219 (135° C.) is emulsifiable and compatible with vegetable and mineral waxes. Durez 225 is even higher melting, and produces harder and tougher films. The hardening properties of these resins can be used to particular advantage with oxidized micro-crystalline waxes.

LOW MELT. For the convenience of manufacturers using steam-jacketed kettles, Durez resins of the high melt types are furnished in modified form with a melting point suitable for this type of equipment. These resins — Durez 13560 and Durez 14140 — melt at approximately 60° C.

THERE IS NO ESCAPE FROM thanite®

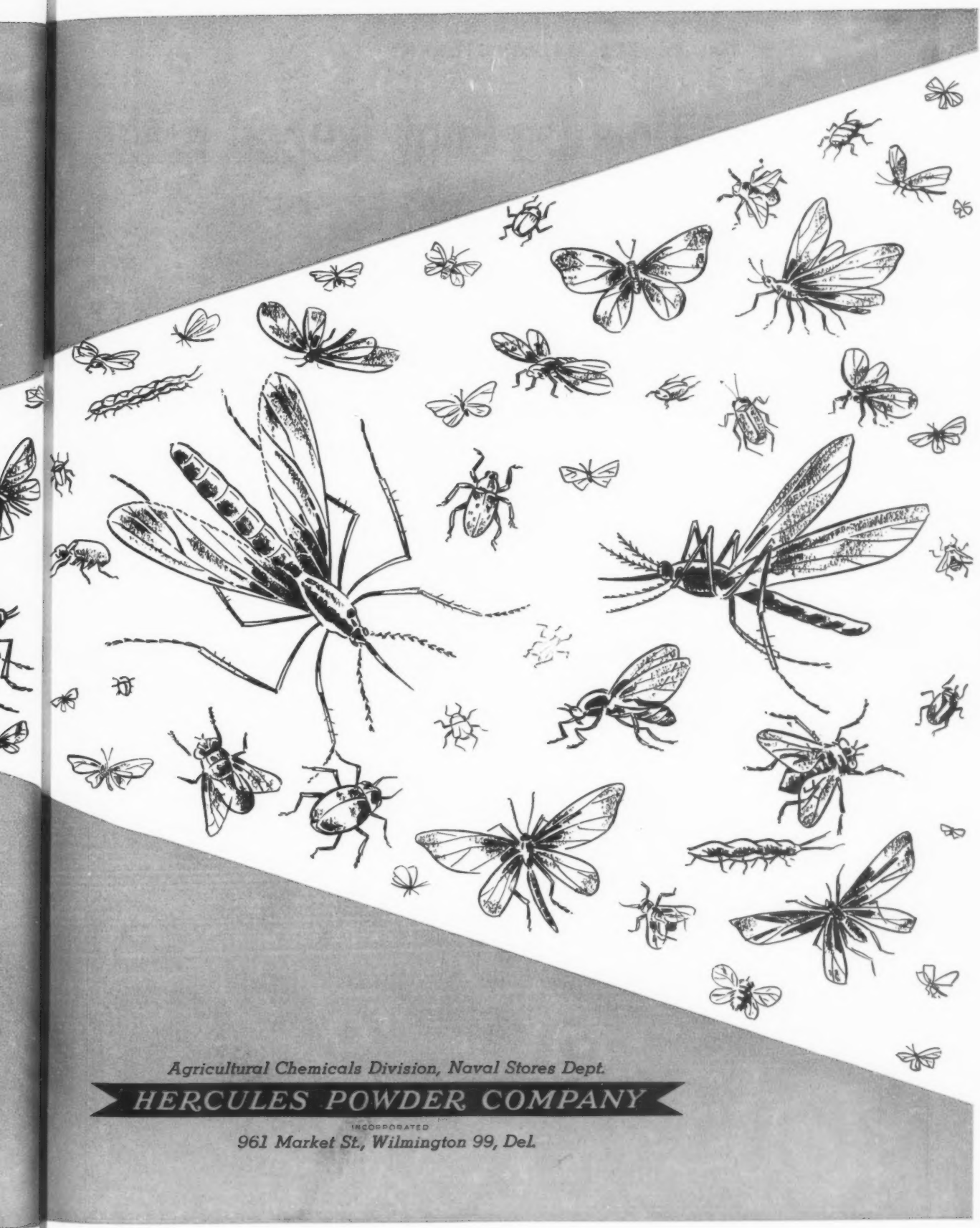


When Thanite is included in any formulation, mosquitoes and flies can't climb above the fog or mist and "wait it out." Thanite's quick knockdown makes them stay put and assures maximum kill. That's one good reason why so many pest control experts add two to four percent Thanite to DDT and other residuals.

In household sprays and aerosols, Thanite can partially replace higher costing ingredients while still providing quick knockdown and high kill. As little as two percent Thanite in household sprays and one percent in aerosols will provide maximum efficiency and economy. Technical data on the properties and uses of Thanite is available by writing to Hercules.

HERCULES POWDER COMPANY

NT55-2

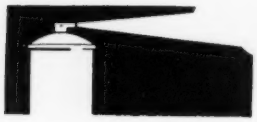


Agricultural Chemicals Division, Naval Stores Dept.

HERCULES POWDER COMPANY

INCORPORATED

961 Market St., Wilmington 99, Del.



A MESSAGE OF INTEREST TO AEROSOL MANUFACTURERS

How Du Pont helped make

aerosol anti-static spray a success

...and how you can use the same technical facilities to perfect your aerosol product

Problems of static electricity in textile mills and other industries are being solved by the application of anti-static solutions. Now the aerosol dispensing method brings shockproofing to the consumer!

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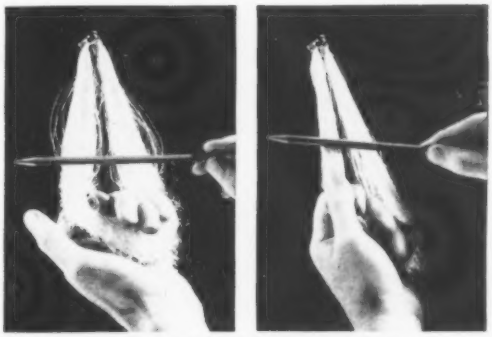

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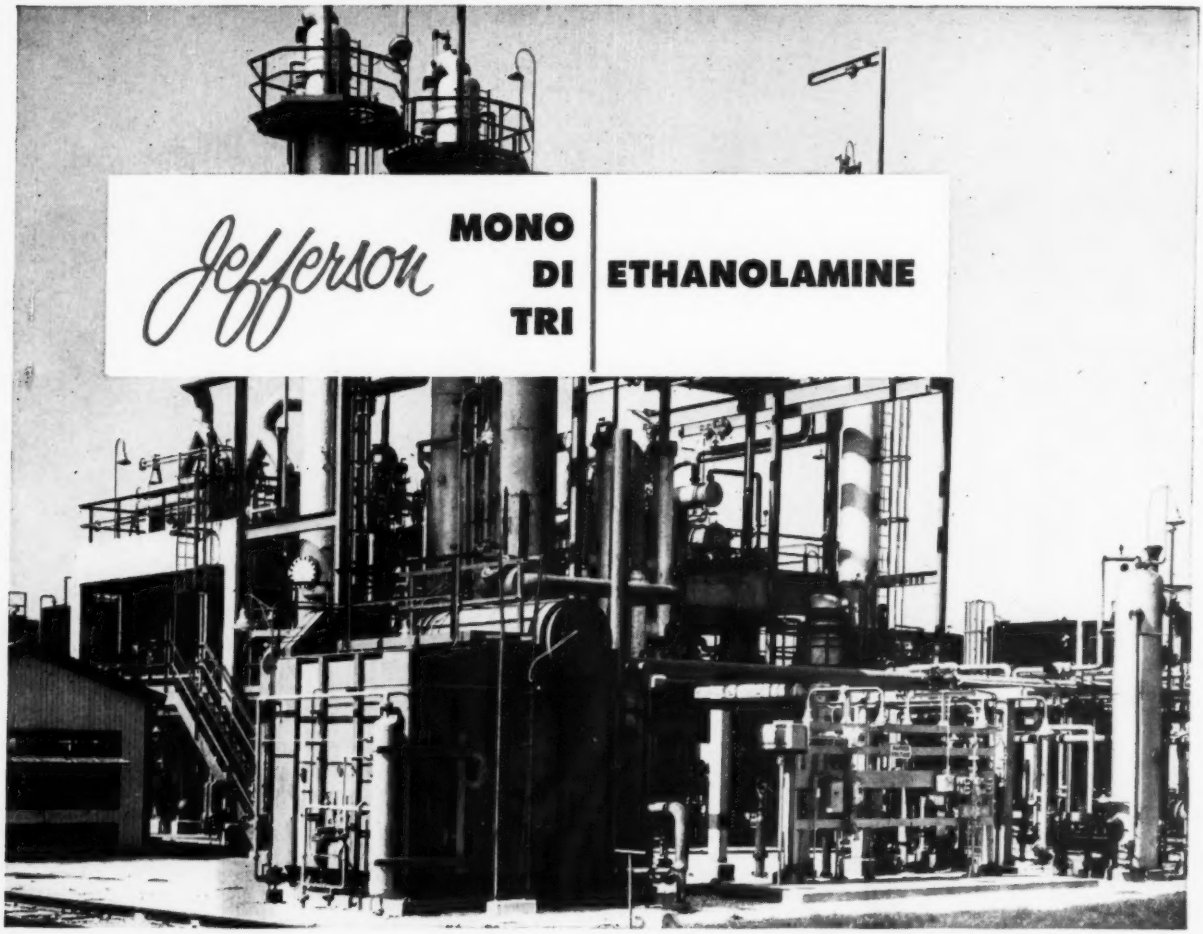

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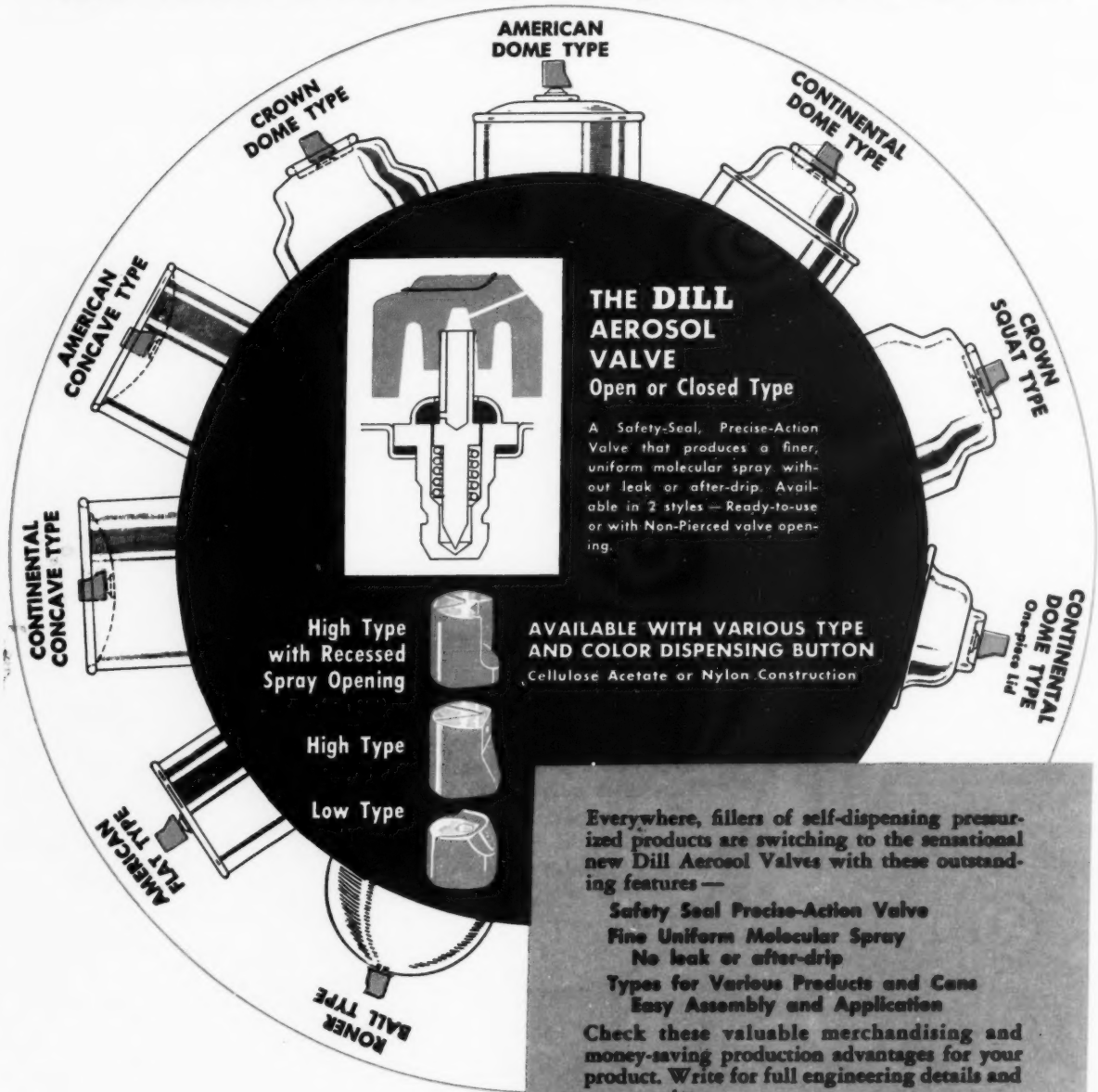
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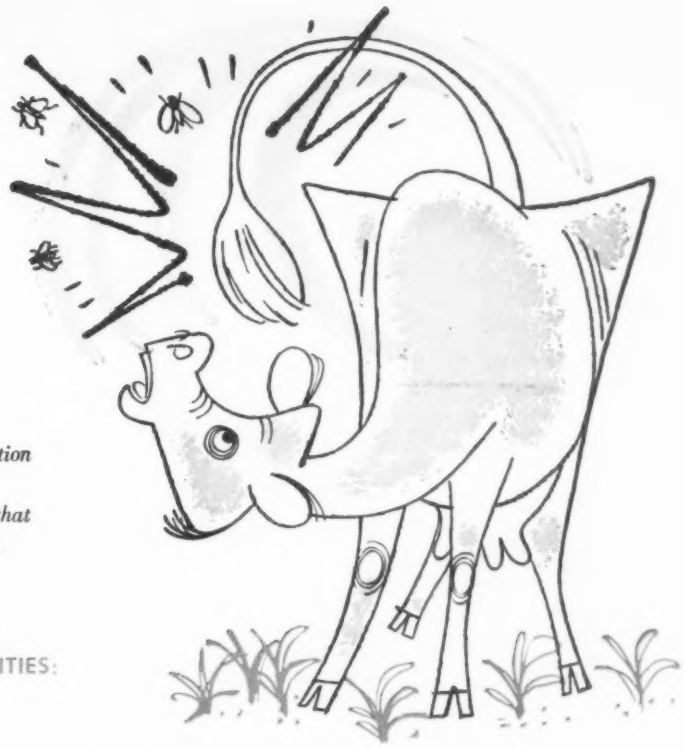

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A Method For Testing

Self-Disinfecting Surfaces

By Robert K. Hoffman, Stephen B. Yeager, HM2 USN, and Saul Kaye,*
Camp Detrick, Frederick, Md.

CONSIDERABLE effort has been expended upon the development of coating materials and of surfaces capable of inactivating microorganisms deposited upon them (1-12). The publications available represent only a small fraction of the effort, and the lack of success to date is evidence that the problem is difficult. In the course of our development work in this field, we encountered the same great variations in test results which have plagued other investigators, and thus undertook a thorough investigation into the mechanism of action of such surfaces. In common with Dunklin and Lester (13), we found that the relative humidity of the atmosphere played an important role in determining the effectiveness of a self-disinfecting surface (14). Further investigations (15, 16) have resulted in a number of observations which may be of interest to other workers in this field, and upon these observations we have based a test procedure which we wish to discuss at this time.

General Method

THE accompanying diagram (Table 1) illustrates the two main steps involved in the evaluation of a self-disinfecting surface: (1) applying the test organisms, and (2) removing them. Each of the steps involves a multitude of simple operations, most of which present alternatives to the investigator. While one would prefer to select a test procedure that conforms as nearly as possible to actual conditions of use, it is important to understand the effect that each alternative will have upon the test results before selecting a final method.

Relative humidity control throughout the test is a crucial part of this method. It has been suggested recently (17) that this concern over the relative humidity is unwarranted, since only rarely does the humidity drop below 35 percent in the United States. This is true, of course, for outdoor conditions, but it must be remembered that our disinfectant surfaces will be indoors, and mostly in premises that are not air-conditioned. In the absence of extensive published measurements of indoor humidities, we have calculated these humidities from the Weather Bureau figures for the outdoor temperatures and relative humidities in the city of Pittsburgh for the past 63 years. The absolute humidity of the outdoor air was calculated, and then this air was assumed to be raised in temperature to 70°F, and the relative humidity of the warmed air was calculated. These data are presented in Figure 1, from which it may be observed that indoor humidities are low for the major portion of the year. It is realized that in this rough calculation, many potential sources of water vapor inside occupied premises have been neglected, but our own experience, and conversation with other investigators, has indicated that the data in Figure 1 agree well with observed relative humi-

Table 1. Testing Self-Disinfecting Surfaces

Application		Removal
1. Test organism a. Nature b. Conditions of growth c. Size of inoculum 2. Suspending medium 3. Manner of application a. Gross b. Film c. Spray 4. Conditions of application a. Time b. Relative humidity c. Temperature	Surface A. Untreated B. Treated	5. Nature of surface a. Material b. Cleanliness 6. Conditions of storage a. Time b. Relative humidity c. Temperature 7. Method of removal a. Swab b. Shaking in diluent 8. Diluent a. Nature b. Temperature c. Neutralizer 9. Method of determining viability of recovered organisms a. Broth tubes b. Solid media

*Paper presented before 41st midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 16, 1955.

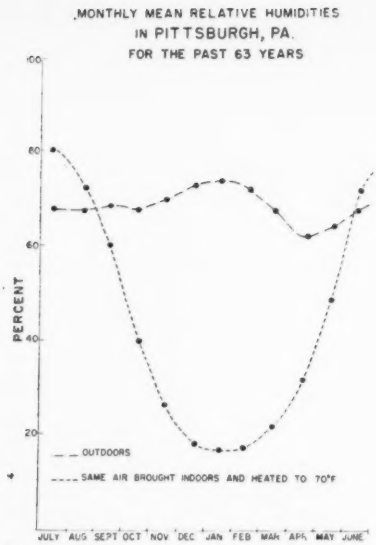


Figure 1: Monthly mean relative humidities in Pittsburgh, Pa. for the past 63 years.

dities.

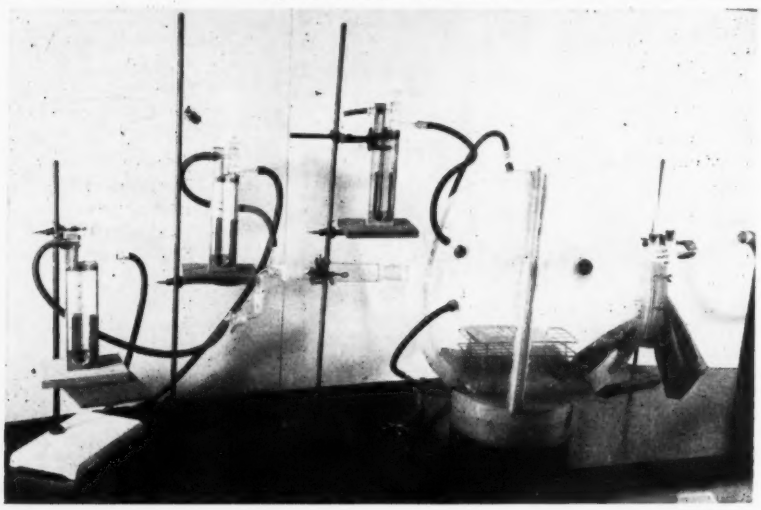
Some methods of testing self-disinfecting surfaces involve placing an inoculated surface face-down over the test material (18), which obviously produces an artificial high relative humidity condition. Most other workers have attempted to be more realistic, in that the microorganisms are applied as films, either by means of a pipette and wire (19), pipette and rubber-tipped rod (20), paint brush (21), or as a coarse spray (22). In all these cases, however, a considerable period of time elapses before the aqueous vehicle reaches equilibrium with the atmospheric humidity, and the humidity is not controlled. It is important to know and control the humidity because this in turn determines both (a) whether the bacteria-containing particle is liquid or solid, and (b) what the water concentration is if the particle is liquid.

To eliminate variation in the water content of the bacterial particulates during the test, we atomized the bacterial suspensions as a fine spray, which was then allowed to settle onto the test surfaces contained in a small chamber where the atmospheric conditions were controlled (Figure 2). The particles of the spray are so fine that they achieve equilibrium with the water content of the air in fractions of a second, and the composition of the disinfectant film is also fixed and unchanging during the exposure.

A second advantage inherent in the use of aerosol inoculation is the elimination or reduction of clumping in the inoculum. It is usually assumed that a single colony on a solid medium has developed from a single cell in the inoculum; however, a cluster of cells on the solid medium will also produce a single colony (23, 24). Thus, if our untreated inoculum is such that 10 colonies develop on the solid medium used for plating, these might either represent 10 clumps of 10 organisms or else 10 single organisms. If the rate of disinfection due to the treatment is such that 90 percent of the organisms are killed before the surface is sampled, the single cell preparation would yield only one colony, while the clumped preparation might still, on the average, yield the original 10 colonies, since one organism may on the average be assumed to be viable in each clump. Using the aerosol system and a fine atomizer*, few particles over five microns in diameter were produced, and the larger of these were allowed to settle out of the air before the test surfaces were exposed. In this way, we materially reduced the likelihood of clumps in the surface inoculum.

By this method of applying the test organisms to the surfaces, we obtained a highly reproducible, uniform distribution. For example, employing *M. pyogenes* var. *aureus* we obtained control counts ranging between 25,000 and 50,000 cells per half-inch square. This is to be contrasted with the results of other workers, who obtained, for example, 20-fold variations in control recoveries with this same organism (19).

Figure 2: Aerosol chamber.



Test Method

THE general method we employed is illustrated in Figure 3. After exposure to the aerosol, the test surfaces, which may consist of different materials such as glass, asphalt tile, linoleum, wool and cotton cloth, etc. were stored in constant humidity tubes, illustrated in Figure 4. These miniature desiccators contained small quantities of saturated solutions of inorganic salts in contact with excess solid salt. Such solutions have constant water vapor pressures at constant temperatures, and thus produce known and constant relative humidities in the air of the tubes. For a relative humidity of less than one percent, dry calcium chloride was used. The saturated solutions employed and the relative humidity of the atmosphere thus produced at 25°C were: magnesium chloride, 33 percent RH; calcium nitrate, 50 percent RH; sodium chloride, 75 percent RH; and

*Vaponephrin Co., Upper Darby, Pa.

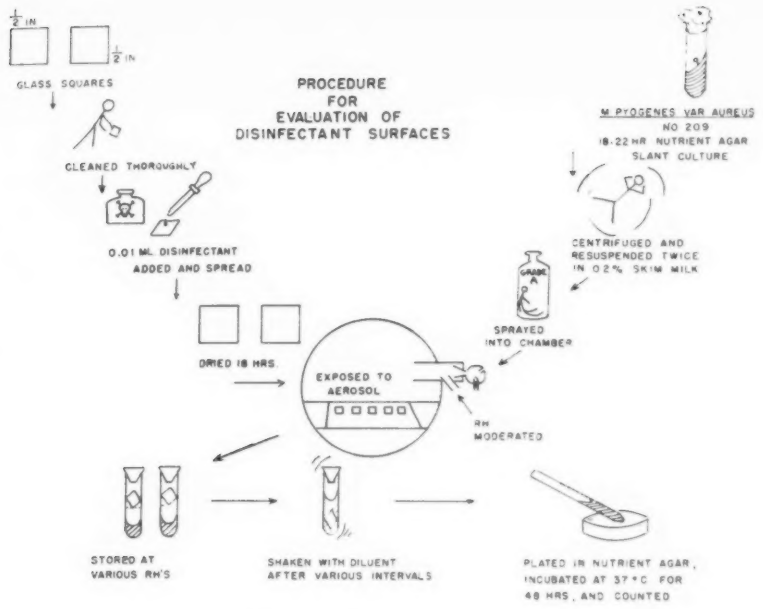

½ IN
½ IN
GLASS SQUARES
PROCEDURE FOR EVALUATION OF DISINFECTANT SURFACES
CLEANED THOROUGHLY
0.01 ML DISINFECTANT ADDED AND SPREAD
M. PYOGENES VAR AUREUS NO 209 18-22 HR NUTRIENT AGAR SLANT CULTURE
CENTRIFUGED AND RESUSPENDED TWICE IN 0.2% SKIM MILK
SPRAYED INTO CHAMBER
DRIED 18 HRS.
EXPOSED TO AEROSOL
RH MODERATED
STORED AT VARIOUS RH'S
SHAKEN WITH DILUENT AFTER VARIOUS INTERVALS
PLATED IN NUTRIENT AGAR, INCUBATED AT 37°C FOR 48 HRS, AND COUNTED

Figure 3: Test procedure

potassium dichromate, 98 percent RH.

Both treated and untreated surfaces were placed in the chamber and inoculated. Immediately after the 30 minute settling period, a number of both types were removed and placed in 10 percent skim milk blanks, for dilution and plating, while other test surfaces were transferred to the constant humidity tubes and stored in a constant temperature room for various test periods. Plating was done in enriched nutrient agar; all plates were incubated for 48 hours at 37°C prior to counting.

Since vegetative cells are inactivated simply upon exposure to various atmospheres on untreated surfaces, and since treated plates often give significantly lower recovery, even initially, than untreated plates, the percent surviving cannot be determined simply from the initial control count and the experimental recovery. Instead, we first measure the recoveries from untreated plates at the various humidities and times of exposure. These figures are then divided into the number of organisms recovered from treated surfaces subjected to the same exposure times and humidities, in order to give us an index of the self-disinfecting effectiveness of the surface.

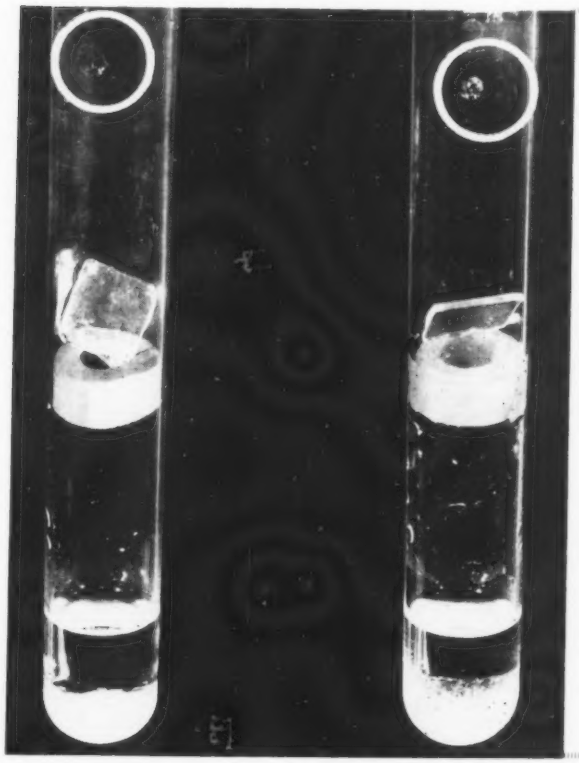
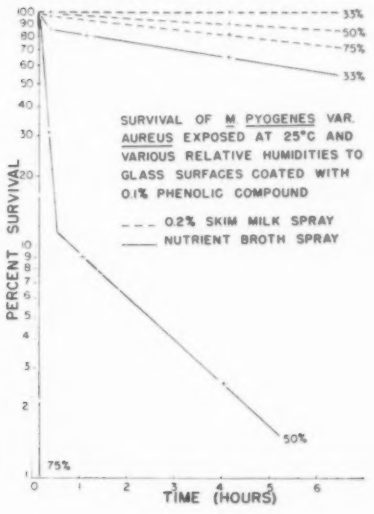


Figure 4: Constant humidity tubes.

Discussion

a. Suspending vehicle: One can select whatever medium appears reasonable for suspending the organisms for inoculation upon the surfaces, but one should be aware that the medium will influence the effectiveness of disinfection. In Figure 5 are shown the survival curves of *M. pyogenes* var. *aureus* No. 209 exposed at 25°C and various relative humidities to glass surfaces treated with a 0.1 percent solution of a commercial phenolic disinfectant. The

Figure 5: Survival of M. pyogenes var. aureus at various humidities.



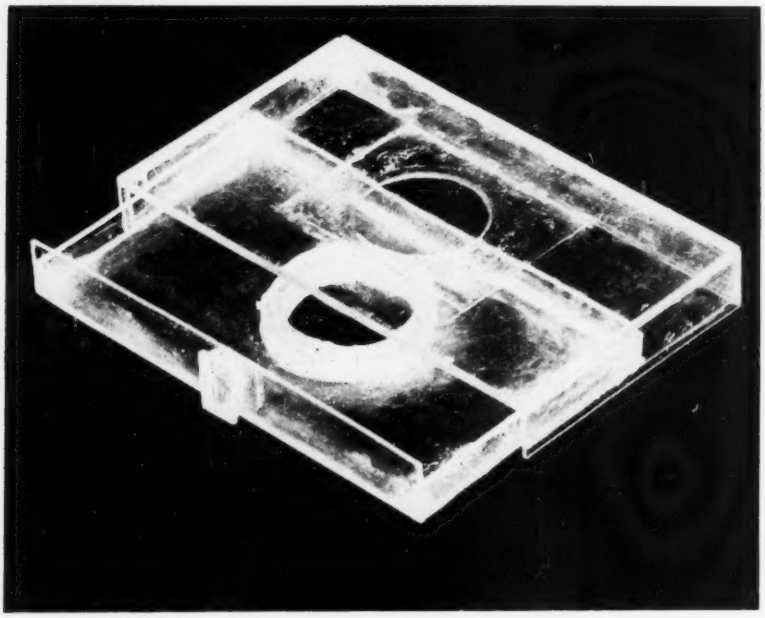


Figure 6: Observation cell.

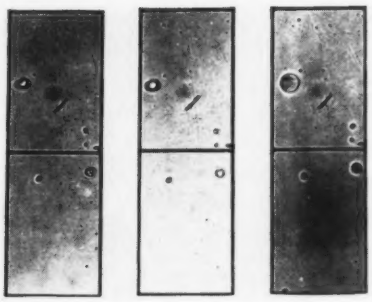
great difference between the two suspending media, skim milk and broth, is obvious.

The reason for the difference becomes apparent when one observes directly the effect of relative humidity upon microscopic bacteria-containing particles settled on a glass slide. A simple plastic chamber, shown in Figure 6, was constructed for this purpose, and used on the microscopic stage. This chamber contained a drawer into which saturated solutions of various inorganic salts could be placed in order to obtain constant relative humidities. The design of the chamber and drawer was such that light from the substage condenser passed through the cell and through the microscope cover slip on which the particles had settled. The tests began at the lowest possible humidity and the particles were then observed as consecutively higher relative humidity atmospheres were produced. In Table 2 these observations are summarized. Figures 7 and 8 are photomicrographs of skim milk and of nutrient broth particles at various humidities, giving us visual evidence of how the hygroscopic nature of the medium employed to suspend the inoculum can effect the particle size and composition. These in turn affect the test results.

Table 2. The Effect of Relative Humidity upon the Physical State of Difco Nutrient Broth and Difco Skim Milk Particles

	Physical state of particles	
Per cent RH	Difco nutrient broth	Difco skim milk
33	Solid	Solid
43	Liquid droplets	Solid
50	Liquid droplets	Solid
75	Liquid droplets	Solid
98	Liquid droplets	Liquid droplets

b. *Nature of Surface*: Klarmann and his co-workers have illustrated another important point involved in the effectiveness of self-disinfecting surfaces (10), namely, the nature of the surface. Our results, illustrated in Table 3, in which we employed a mixture containing a phenolic disinfectant as active agent, confirm these findings. In addition to the previously reported influence of relative humidity, we see that the less porous the surface, the greater the effectiveness of the disinfectant. We have found, besides, that one composition may be the more effective on one surface, and a second on another surface.



33% 75% 98%

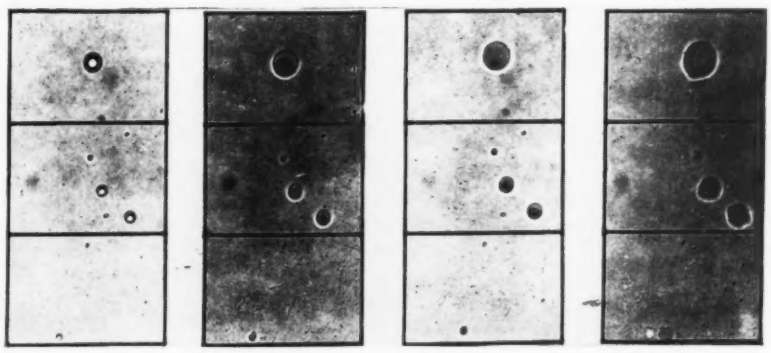
Figure 7: Photomicrographs of skim milk particles at various relative humidities.

c. *Removal of Microorganisms*: Many workers have been concerned with the problem of removing bacteria from surfaces upon which they are impinged (19-22, 25-28), and this is possibly one of the greatest difficulties in this type of test. Of the various means for obtaining quantitative data, the employment of small test surfaces which could later be shaken in a diluent appeared

(*Turn to Page* 165)

Figure 8: Photomicrographs of broth particles at various relative humidities.

33% 50% 75% 98%



What it takes to clean

FRANKLIN INSTITUTE

By Florence W. Brewer

Benjamin Franklin, in whose honor The Franklin Institute was established, makes for a 90-ton delicate job of cleaning. His sponge baths are accomplished by a man weighing less than 125 pounds who must work in his stocking feet. Only distilled water is used on the heroic-size marble statue. John Treen is shown here working on the head.

"THE more complicated and varied the job, the simpler the approach to it should be," is the maintenance philosophy currently being applied to the apparently involved and intricate problems of cleaning and polishing the rooms and exhibits in The Franklin Institute in Philadelphia.

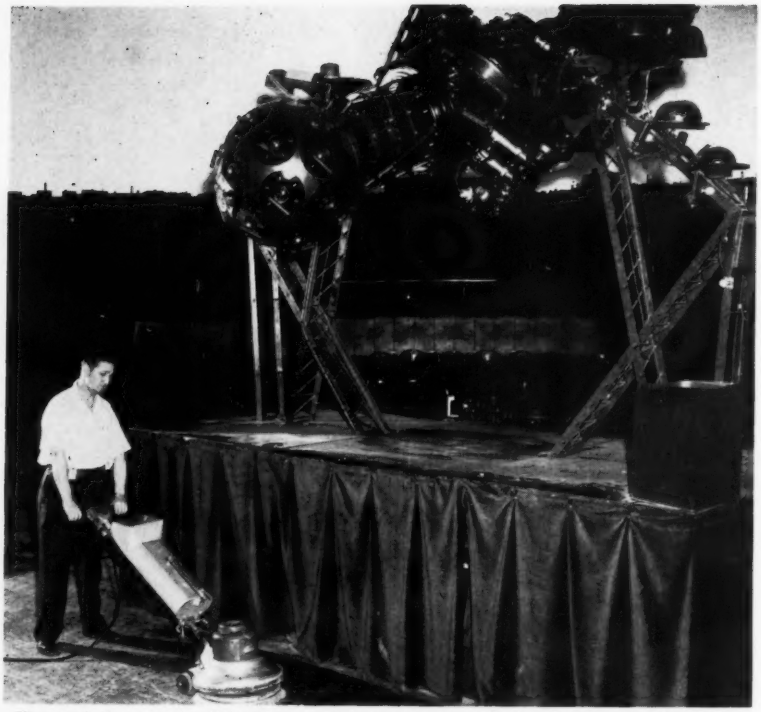
The Franklin Institute itself has a multitude of different aspects and functions. Established in 1824, "for the promotion of the Mechanic Arts," the Institute was envisioned by its founders as a means of educating young men in the manufacturing skills for which a new and growing demand existed. The Industrial Revolution was just beginning to call for specially trained workmen, but no schools for such training had been established. Starting well over a century ago with classes in natural philosophy and mechanics, architecture and drawing, machine design, naval architecture and mathematics, the Institute soon expanded its activities to include lectures to members, trade exhibitions, the publication of the *Franklin Journal* and *Mechanics Magazine* (now *The Journal of The Franklin Institute*), The Franklin Institute High School, (now discontinued as public high schools have increased), a technical library, the School of Design for Women, and the Committee on Science and the Arts. The latter was organized as a result of the need for a trustworthy, impartial group of men who could investigate new designs and inventions, report on what had already been accomplished in the field and make recommendations or endorsements. This function has gradually grown to include the award of a number of medals for scientific achievement and the conduct of diverse technical investigations for both public and private organizations.

Many years of planning, research and development culminated in the opening of the Institute's present building on Benjamin Franklin Parkway in 1934. One of the projects which became a reality with the new building was the scientific and technological Museum which, with the Fels Planetarium (provided by gift of the late Samuel S. Fels of Fels and Company), attracts over 300,000 visitors annually to this unique institution.

The actual buildings include the main building, with two annexes containing research laboratories, and a small maintenance shop. The L-shaped main building houses the museum in one wing and the Fels Planetarium in the other. It has 300,000 square feet of floor space, five floors and 4000 separate exhibits.

The Institute library now contains some 145,000 volumes and 50,000 pamphlets. The Franklin Institute Museum inaugurated a new kind of visual education. Aside from certain exhibits of famous historical apparatus used by Franklin, Faraday, Priestley, Edison, and others, everything on display can be actually used and operated by the visitor. Special mechanisms have been constructed to be activated by merely pushing a button or turning a crank. In addition to the Planetarium, a fine observatory is available to the public with refracting and reflecting telescopes.

Consistent with printing and papermaking activities of Benjamin Franklin, the Museum includes con-



The cork floor in the Fels Planetarium (made possible by the generosity of the late Samuel S. Fels of Fels and Company) receives the standard "floor treatment" used throughout The Franklin Institute. Here Mike O'Brien, foreman, uses one of the five floor scrubbing machines with the regular detergent in a prescribed solution.

siderable material on paper and its uses. Paper is made in the Museum on a miniature replica of a Foudrinier machine. A print shop in the building, open to the public as an industrial demonstration, does much of the printing needed by the various departments of the Institute.

Other outstanding exhibits include Marine Transportation with scale models and navigation instruments; the Aviation Section which includes Amelia Earhart's Lockheed "Vega" monoplane and two real Link trainers; the Chemistry Section; a Driverator which tests a driver's skill and reaction time under common highway conditions and emergencies; and a Communications Exhibit. Many industries have contributed to the establishment and maintenance of these expensive displays, because of the valuable work done by the Institute in awakening and fostering interest in scientific and mechanical subjects.

Even if no one came to see the exhibits, the proper maintenance and housekeeping of this wide variety of material would present a monumental task. This is magnified many many times by the constant influx of visitors of all ages and interests. Tourists, school children, scientists and local visitors enter the doors in a constant stream, push the buttons, try their skill in the Link trainers, and generally touch, handle and manipulate.

Supervising the big job of keeping the Franklin Institute clean, sanitary and shining is Frank M. Dowler, Jr., building superintendent. He directs a staff of 19 men and six women in the House Service Department. Their working hours are from 6 A.M. to 1:30 P.M. daily.

When he first took over the maintenance of the building he found that a great diversity of products were used to care for the tremendously varied materials and objects which had to be cleaned and maintained. Almost every type of floor and wall material used by builders is represented somewhere in the Institute. Exhibits range from a tiny model of a steam engine (made largely of gold and silver by a 16-year old boy in 1849) in a one-half inch cube, to a huge real, 350-ton locomotive, 100 feet long, with ten driving wheels.

Mr. Dowler held firm to the belief that with patience and persistence he could find one product that would take care of all his basic cleaning needs. He first managed to cut down the cleaning products used from 12 to eight, to six and then to four. He now has one product which is used in cleaning the entire building from greasy machinery to water color paint. It is a concentrated liquid detergent which is diluted to different strengths to suit the various jobs. He buys a year's supply at a time and has one 55-gallon drum delivered every other month. Even the cork floor in the Planetarium is cleaned with this product and then polished with a water emulsion wax. Throughout the building, Mr. Dowler says, "Rinsing is unnecessary unless too much of the detergent is used. Naturally our training is aimed at preventing this. The correct solution for each job is carefully calculated and the men are required to follow it."

A liquid cocoanut oil hand soap is dispensed in the washrooms. No disinfectants or deodorants are used in any part of the building. Mr. Dowler feels strongly that such products are, if not offensive in their own odors, merely sweet-smelling cover-ups for lack of true cleanliness. In selecting his maintenance products, he avoids the use of any with an odor of their own. A liquid cleaner and disinfectant compound is used in toilet bowls, but this is the only exception to his "one product rule."

No abrasive cleaner is used in the entire operation, because Mr. Dowler believes that even the mildest of these products leaves minute permanent scratches, which make future maintenance more difficult.

A contractor takes care of washing all the outside windows, but the interior of the Institute, especially the Museum, is full of win-

dow glass. On exhibits this is cleaned by the staff with a special commercial window cleaning product in liquid form (10 gallons a year). This is also used for cleaning aluminum. The maintenance men wash interior glass partitions with ammonia and water applied with a chamois. There is considerable "Plexiglass" used in the various exhibits. This is cleaned with one of the wax-type glass cleaners (two gallons a year), to prevent lint from jumping back onto the plastic surface.

Three waxes supply the needs of Mr. Dowler's staff. A spirit wax (100 gallons a year in five gallon cans) is applied to linoleum floors only. A paste wax is used on wooden floors and a water wax (100 gallons a year) on all other types of flooring. No wax is used on the Institute's terrazzo floors, as it makes them too slippery.

Plastic furniture and leather are cleaned with imported English saddle soap (five pounds per year), while metal office furniture is cleaned and polished with one of the silicone liquid polishes. The staff is trained to use oil only on the solid French-polished mahogany and walnut furniture, and paste wax on less fine woods. Most of the metal in the Institute buildings is bronze, which is oiled and rubbed down well.

Wall spots are sprayed and then wiped off. Mr. Dowler has found that a damp rag will leave a ring, whereas a spray application removes the spot without leaving any evidence.

Draperies are washed and spot cleaned with the liquid detergent employed in general cleaning. Upholstery is scrubbed with the suds of this product.

The maintenance staff of the Institute has five floor scrubbing and polishing machines and two water pick-up wet-dry vacuums. Citing the advantages of these machines, Mr. Dowler reported, "The lunchroom used to take two men all day to scrub with mops and tanks. Now it can be done in 45 minutes with the scrubber and vacuum."

Use of the polishing machines tends to leave a built-up deposit close to the walls. Mr. Dowler has found that this can be removed by heating water emulsion wax to 75° or 80°, applying it to these areas and then buffing it while wet.

Another useful trick he has discovered involved an asphalt tile floor spotted by acid during a lecture demonstration. Spirit wax "bled" the color back into the acid-faded spots.

Just as many women have learned, Mr. Dowler knows that the best way to remove dust and dirt from the velvet which lines some of the exhibits is to brush it with the sticky side of Scotch tape.

The restaurant of the Institute is as much a mechanical marvel as many of the exhibits in the Museum. It is a completely push-button operation, with all food dispensed by machine. Change is returned automatically. All service is paper and one man, employed by the concessionaire, can handle all the food preparation done in the building. One man from the Institute staff works with him to handle all the cleaning in this area.

The laboratories receive the same treatment as any other part of the Institute, except that no wax is used on the floors, which are of non-conducting linoleum.

Frank M. Dowler, Jr., building superintendent, in front of the impressive main entrance of The Franklin Institute in Philadelphia. Mr. Dowler supervises the maintenance and housekeeping of an astonishing variety of equipment, exhibits and materials — and does it all with the maximum of efficiency and simplicity.

Maintenance Breakdown

THE various maintenance jobs are divided up as follows: one man in the incinerator room; one parking guard; two men for "odds and ends," which include delivering packages and sick children; one man in the restaurant; two men for wall washing; two men on a waxing

(*Turn to Page* 181)

Tom Grogan, of the Institute staff, cleans the aluminum of a P51 airplane in the Aviation Section with the same product many a housewife uses on her windows — a clear liquid window cleaning compound. This is SOP in the Institute for cleaning and polishing aluminum surfaces.

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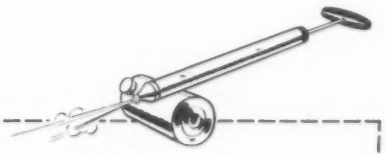

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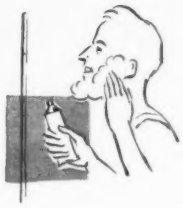

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Mothproofing Woolens

By Hamilton Laudani[1]
Stored-Product Insects Laboratory, Savannah, Georgia[2]

THE efficacy of DDT at extremely low concentrations to protect woolens and other keratinous materials against fabric insect damage has resulted in the widespread use of this insecticide for treating woolen clothing, upholstery, and rugs (U. S. Bur. of Ent. and Plant Quar. 1953).[3] The discovery of the selective pickup of DDT by wool when treated in very dilute nonionic emulsions (Laudani 1953) further stimulated the use of DDT for mothproofing purposes. The public acceptance of this insecticide for mothproofing has been so great that it has become one of the leading mothproofing agents on the market.

The successful use of DDT for protecting woolens against insect damage created a great deal of interest in the evaluation of other chlorinated hydrocarbons for mothproofing (Laudani and Marzke 1949). Two of the latest materials evaluated by the Savannah, Georgia, laboratory are Perthane and Strobane. Both are chlorinated hydrocarbon compounds which are soluble in solvents normally used for DDT.

Perthane was first evaluated as a protectant for woolens against fabric insects in June 1950. The preliminary tests conducted at that time showed Perthane to be very promising. After approximately four years, sufficient interest was again shown in Perthane to warrant additional testing.

Unpublished data presented by the manufacturers of Strobane indicated that this material was promising as a protectant for woolens as well as a toxicant for carpet beetles.

The two compounds, Perthane and Strobane, were evaluated simultaneously for their effectiveness as protectants of woolens against fabric insect damage and also as toxicants for controlling black carpet beetles, *Attagenus piceus* (Oliv.), and furniture carpet beetles, *Anthrenus flavipes* Lec. DDT was used as a standard for comparison in the former tests, and DDT, lindane, and chlordane in the latter.

The studies conducted were restricted to the biological assay of the effectiveness of the two materials mentioned. Since other important factors must be investigated before a material can be used as a mothproofing agent, the discussion in this paper should not be construed as recommendation for the use of the materials evaluated.

Procedure

Protection rendered to woolens.—Botany-style No. 315 broadcloth containing 100 percent wool[4] was used exclusively as the test fabric. Samples of this cloth were impregnated with acetone solutions of Perthane or Strobane at the following concentrations: 0.05, 0.10, 0.25, 0.50, and 3.00 percent by weight of the cloth. After treatment, the specimens were thoroughly aired for seven days to remove all volatile constituents.

One series of the above treated fabrics was tested for its resistance to damage by the larvae of black carpet beetles without further treatment; a second series of those cloth samples treated at 0.5 and 3.0 percent by weight was tested after the cloth samples were subjected to 1, 2, and 3 washings or dry cleanings.

Included in these tests also were samples of cloth treated with Perthane at 0.5 and 3.0 percent by weight which had aged four years. These cloths had been stored in cellophane bags in a room having a constant temperature of 80° ± 2° F. and relative humidity of 60 percent ± 5 percent. Since DDT-treated cloth of the same age was not available, some which had aged five years under the same conditions was used as a standard for comparison.

Evaluation of Strobane and Perthane as protectants for woolens against fabric insect damage and as toxicants for controlling black carpet beetles

[1] The author wishes to acknowledge the aid of L. L. McDonald in conducting the biological tests.

[2] This is one of the field stations of the Stored-Product Insects Section, Biological Sciences Branch, Marketing Research Division, Agricultural Marketing Service, U. S. Department of Agriculture.

[3] See "Literature Cited" at end of this article.

[4] Standard mothproofing test fabric of the American Association of Textile Chemists and Colorists, and of the Chemical Specialties Manufacturers Association.

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Table 1. — Results of laboratory evaluation tests on the protection rendered to woolen cloth by Perthane and Strobane as compared with DDT.

Concentration	Mortality	Visual damage		Excrement wt.
Percent	Percent	Nap	Warp	Mg. per larva
		Perthane		
0.05	0	3	2-3	1.91
0.10	0	1-2	1-2	0.78
0.25	0	1	0-1	0.31
0.50	2	0	0	0.29
3.00	0	0	0	0.21
		Strobane		
0.05	0	3	3	2.39
0.10	2	2	1-2	0.87
0.25	2	1	0-1	0.21
0.50	0	0	0	0.14
3.00	0	0	0	0.13
		DDT		
0.05	2	1	0-1	0.32
0.10	0	0	0	0.19
0.25	0	0	0	0.19
0.50	0	0	0	0.12
3.00	5	0	0	0.14
		Check (untreated)		
—	0	3-4	3-4	3.42

Table 2. — Results of laboratory evaluation tests on the protection rendered to woolen cloth by Perthane and Strobane after laundering as compared with DDT.

Concentration	Visual damage											
	No. of washings						No. of dry cleanings					
	1		2		3		1		2		3	
	Nap	Warp	Nap	Warp	Nap	Warp	Nap	Warp	Nap	Warp	Nap	Warp
						Perthane						
0.50	2-3	2	3-4	3	4	4	4	3-4	4	4	4	3
3.00	0	0	0	0	0-1	0	1-2	1-2	2-3	2	3	3
						Strobane						
0.50	0-1	0-1	2	1	2	2	3-4	3	4	4	4	3-4
3.00	0	0	0	0	0	0	2	2	4	3-4	4	4
						DDT						
0.50	0-1	0	1	1	3	2-3	1-2	1	4	3	4	3-4
3.00	0	0	0	0	0	0	0	0	4	3-4	4	4
						Check (untreated)						
—	4	3-4	4	4	4	4	4	4	4	4	4	4

The washing and dry cleaning of the above samples were done in a Launder-Ometer.[5] The materials were washed for 30 minutes at 40° C. in a solution which contained five grams of neutral chip soap[6] using a water-to-fabric ratio of 30 to one. After washing, the materials were hand-squeezed and then given two 10-minute rinses with water at approximately 28° C., using the same ratio as in the washing. The dry cleaning process consisted of placing two pieces of the treated fabric, one by two inches in size, in 50 ml. of Stoddard's solvent and agitating them for 20 minutes at 32° C. The excess solvent was squeezed out by hand and the cloth laid on a horizontal screen to dry at room temperature. When dry, the fabric was pressed with a steam iron and allowed to dry for another day before being tested.

Additional pieces of cloth treated identically with DDT were used as standards for comparison. Untreated cloth was used as checks.

The biological mothproofing evaluations were conducted in accordance with the CSMA test method *(Anon. 1952)*. The treated cloths, one by two inches in size, were exposed individually in open petri dishes to 10 black carpet beetle larvae for 28 days. In such an exposure the insects had the choice of staying on or off the treated clothes. The test insects were three to five months old and weighed 4.5 to 6.5 mg. Four replicates were used. During the exposure period the petri dishes with the insects and the test cloths were kept in a room held at a constant temperature of 80° ± 2° F. and a relative humidity of 60 percent ± 5 percent.

The results were evaluated according to (1) mortality, (2) visual damage, and (3) excrement weight. The visual damage is expressed as the amount of nap (pile) and warp feeding (holes through cloth). The sliding scale used for expressing the nap and warp damage was 0 to five, with 0 as no dam-

Table 3.—Results of laboratory evaluation tests on the protection rendered to woolen cloth by Perthane before and after aging 4 years as compared with DDT.

Concentration	Age of Residue	Mortality	Visual damage		Excrement wt.
Percent	Years	Percent	Nap	Warp	Mg. per larva
		Perthane			
0.5	0	2.5	0	0	0.29
	4	0	1	0-1	0.29
3.0	0	0	0	0	0.21
	4	2.5	0	0	0.13
		DDT			
0.5	0	0	0	0	0.12
	5	7.5	0	0	0.17
3.0	0	5	0	0	0.14
	5	5	0	0	0.18
		Check (untreated)			
—	—	0	4	4	3.52
	—	0	4	3	3.19

[5] Standard laboratory machine for washing and dry cleaning tests adopted by the American Association of Textile Chemists and Colorists, and the Chemical Specialties Manufacturing Association.

[6] Fed. Spec. P-S-566.

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age and five as almost complete destruction of the cloth specimens.

Toxicity tests. — Two types of toxicity tests were conducted to determine: (1) The direct residual contact action, and (2) the vapor action of Perthane and Strobane. The residues for the contact tests were prepared by spraying acetone solutions of the insecticides on untempered masonite board with an electric sprayer having a De Vilbiss nozzle, type AF 14728, and operating at an air pressure of 10 psi. After the deposits had aged one day, one series of insects was exposed for one day and a second series was allowed to remain continuously on the treated panel for 14 days during which time observations were made daily. The insects were retained on the treated surface with the use of open-mouth glass cylinders. Perthane and Strobane were tested at 25, 50, 100, and 200 mg. per square foot and the following insecticides were included for comparison: Lindane at 25 and 50, chlordane at 50 and 100, and DDT at 50, 100, and 200 mg. per square foot.

For the vapor toxicity tests, one-quart Mason glass fruit jars were used, the inside surface being treated with acetone solutions of the insecticides. The solutions were formulated so that a certain volume would contain the amount of the insecticide equal to that required to obtain the desired deposit on the inner surface of the glass jar. The measured amount of the solution was placed in the jars and the jars rotated until the acetone had completely volatilized. The insecticides being evaluated were applied at 25, 50, and 100 mg. per square foot and the following were included for comparison: Lindane at 25 and 50, and chlordane at 50 and 100 m. per square foot.

The larvae of the black and furniture carpet beetles were exposed by placing 10 insects of each species in open-mouth vials and inverting the treated glass jars over the vials. In this manner, the insects

(*Turn to Page* 177)

Table 4.—Percentage of dead (D) and dead and moribund (D+M) black carpet beetle larvae after a 24-hour exposure to treated masonite panels.

Residue	Post-exposure in days													
	1		2		6		8		10		12		14	
Mg./sq. ft.	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M
Perthane														
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
200	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Strobane														
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
200	0	0	0	0	0	0	0	0	0	2	0	2	0	2
DDT														
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	2	0	2	0	2	0	2	0	2	0	2	5	8
200	0	8	0	8	0	8	0	8	0	8	0	8	0	8
Lindane														
25	0	2	0	2	0	2	0	2	0	2	0	2	0	2
50	0	100	0	100	10	100	12	100	12	100	20	100	25	100
Chlordane														
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	2	0	2	0	2	0	2	0	2	0	2
Check (untreated)														
—	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5. — Percentage of dead (D) and dead and moribund (D+M) black carpet beetle larvae during a continuous 14-day exposure to treated masonite panels.

Residue	Exposure in days													
	1		2		4		7		11		14		100	
Mg./sq. ft.	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M
Perthane														
25	0	0	0	0	0	0	0	0	0	0	0	5	0	5
50	0	12	0	12	0	12	0	12	0	18	0	22	0	22
100	0	12	0	32	0	32	0	32	0	32	0	38	0	38
200	0	22	0	35	0	62	0	62	0	62	0	62	0	62
Strobane														
25	0	0	0	0	0	0	0	0	0	0	0	2	0	8
50	0	0	0	0	0	0	0	0	0	0	0	0	0	5
100	0	0	0	0	0	2	0	2	0	5	0	22	0	22
200	0	0	0	2	0	20	0	33	0	33	0	78	0	78
DDT														
50	0	12	0	12	0	12	0	12	0	12	0	28	0	28
100	0	15	0	25	0	25	0	25	0	25	0	35	0	35
200	0	22	0	22	0	32	0	32	0	32	0	32	0	62
Lindane														
25	0	45	0	95	0	100	0	100	0	100	22	100	28	100
50	0	100	0	100	2	100	18	100	28	100	50	100	80	100
Chlordane														
50	0	0	0	0	0	0	0	2	0	2	0	22	0	28
100	0	0	0	10	0	58	0	70	0	82	0	90	2	100
Check (untreated)														
–	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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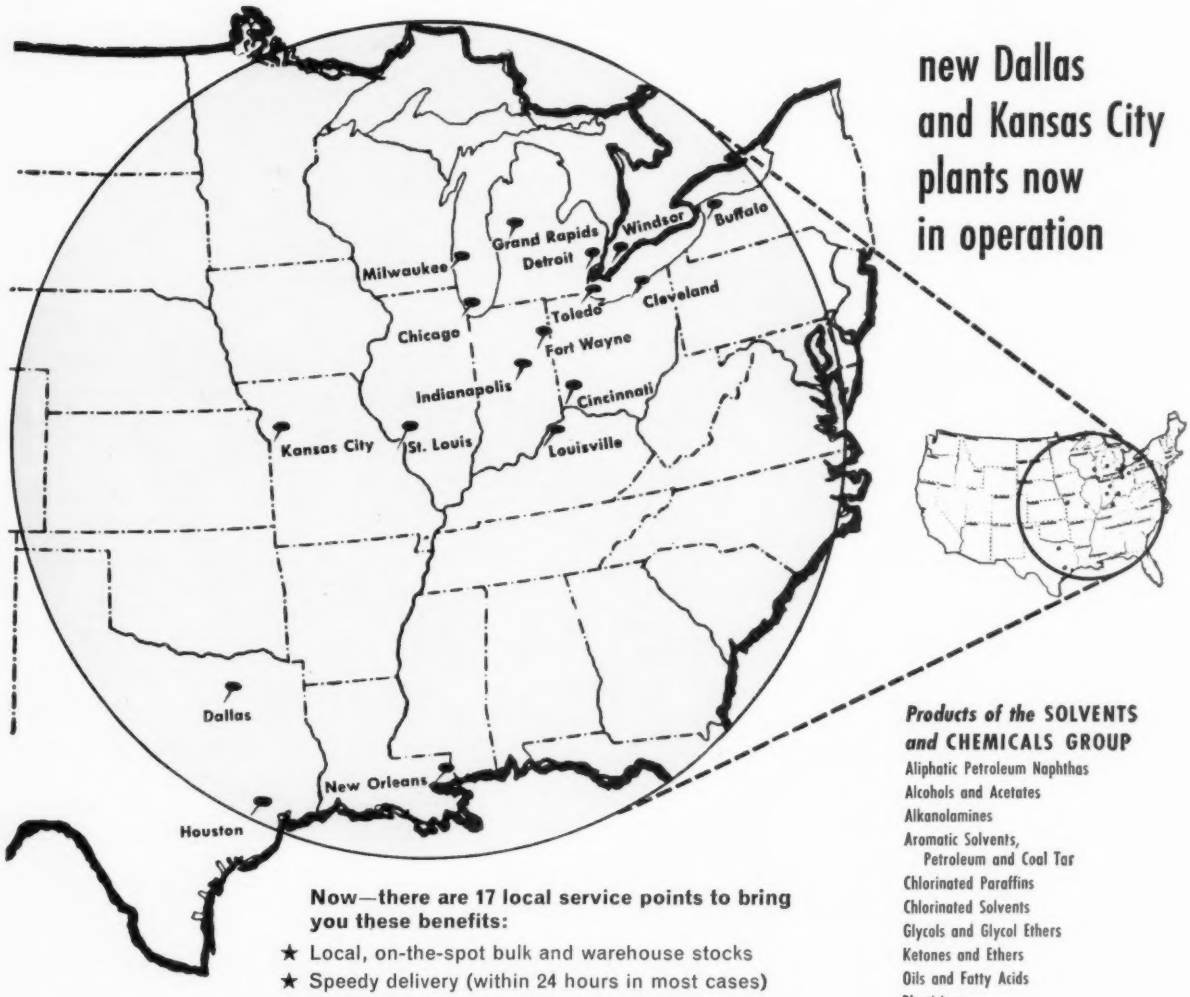

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Aerosol Regulations...

A complete summary of federal, state and local regulations and laws affecting pressure packages

LIKE most other types of modern business, the aerosol industry today is subject to an increasing number of complex regulations on the federal, state, and local levels. These regulations cover a wide range of subjects, including labelling requirements, packaging, and shipping containers.

It is essential that everyone engaged in the manufacture and marketing of chemical products be familiar with all of the regulations affecting his product, particularly when such products are shipped in interstate commerce.

It should be distinctly understood that laws and regulations which apply to any type of product in a conventional nonpressurized package also apply to that same type of product in a pressurized package and that such regulations must be complied with in addition to the specialized regulations applicable to the pressurized package.

For example, an insecticide package as an aerosol in a pressurized container must comply with all of the laws and regulations applicable to insecticides in general and, in addition, must comply with all of the specialized laws and regulations pertaining to the use of a pressurized package. As an additional example, aerosol cosmetic products must comply not only with regulations pertaining to pressurized packages but also with all regulations of the Federal Food, Drug and Cosmetics Act.

Expressed another way, simple compliance with the laws and regulations pertaining to pressurized packages is not a carte blanche stamp of approval for the manufacturer of an aerosol product; he must also comply with all other laws and regulations pertaining to his type of product, regardless of the form in which it is packaged.

Because nearly all products of modern business eventually enter the channels of interstate commerce, the federal regulations are of greatest importance to the aerosol industry. In most cases, compliance with all of the federal regulations will assure compliance with state and local regulations, although manufacturers and marketers of aerosol products must keep abreast of local situations in view of the tendency of state and local governments to set up their own specialized rules and regulations in certain product areas.

Federal Agencies

ON the federal level, the principal agencies whose regulations pertaining to packaging and shipping affect the aerosol industry are the:

1. Interstate Commerce Commission
2. Federal Trade Commission
3. Department of Health, Education, and Welfare, Food & Drug Administration
4. Department of Agriculture
5. Post Office Department

On a national industry level, manufacturers and marketers of aerosol products should be familiar with rules, regulations, and recommendations of such groups as the Interstate Commerce Commission; the Compressed Gas Commission; Inc. and the Chemical Specialties Manufacturers Association.

The Bureau of Explosives of the Association of American Railroads assists the Interstate Commerce Commission by making inspections, conducting investigations, and conferring with manufacturers and shippers in order to determine what regulations are desirable for the safe shipment of dangerous articles.

On a municipal level, certain cities—notably New York City and Cleveland—have specific regu-

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Written in cooperation with
H. A. Campbell, chief inspector
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lations, over and above those of the various federal agencies, affecting the sale of certain types of aerosol products within their own territorial jurisdictions. The Chemical Specialties Manufacturers Association is a reliable source of information about any of these local and state regulations.

Finally, of all the federal agencies, the one currently most important, so far as regulations affecting the aerosol industry is concerned is the Interstate Commerce Commission.

ICC Aerosol Rules

THE Interstate Commerce Commission makes regulations providing for the classification, packaging, marking, and labeling of dangerous articles as defined by its regulations for transportation by land, water and air. The term "dangerous articles" includes explosives, flammable liquids, flammable solids, oxidizing materials, acids, corrosive liquids, compressed gases, and poisons. It is primarily on the basis of their compressed gas content that most pressurized packaged aerosol products are subject to Interstate Commerce Commission regulation. Some aerosol products also come under I.C.C. rules because they are flammable by I.C.C. definition. Others may be subject to regulation because of the nature of their ingredients other than the propellent.

Air shipments are regulated by the Civil Aeronautics Administration of the U. S. Department of Commerce while water shipments are subject to regulations of the U. S. Coast Guard. The regulations of these two groups, however, generally follow the regulations of the Interstate Commerce Commission.

Interstate Commerce Commission regulations also require that all aerosol products in cans be nonpoisonous in order to qualify for legal shipment in interstate commerce.

As mentioned earlier, the Bureau of Explosives currently conducts investigations for the I.C.C., and on the basis of its findings makes recommendations for conditions of shipment and specifications for containers for all types of products falling under I.C.C. regulation.

The most pertinent section of the Interstate Commerce Commission regulations is contained in Freight Tariff No. 9, copies of which may be obtained from the Bureau of Explosives, 30 Vesey St., New York 7, N. Y.

From the aerosol industry's point of view, the most important portions of the I.C.C. regulations are those in Freight Tariff No. 9, dealing with flammability and permissible pressures, and the required packing and marking rules. The flammability and pressure provisions of the I.C.C. regulations will be considered separately in the following sections.

The subject breakdown in the following sections does not follow the format of Tariff No. 9 but has been arranged as shown simply for convenience of the reader. Because there is a distinct difference between flammable and nonflammable products insofar as the Interstate Commerce Commission regulations are concerned, the two types of products will be considered separately in this explanation.

Flammable Products

UNDER I.C.C. regulations, an aerosol product is defined as flammable if any one of the following three conditions occur:

1. Using the Bureau of Explosives' Flame Projection Apparatus,* the flame projects more than 18 inches beyond the ignition source when the valve on the aerosol container is opened fully, or the flame flashes back and burns at the valve with any degree of valve opening.
2. Using the Bureau of Explosives' Open Drum Apparatus,† there is any significant propagation of flame away from the ignition source.
3. Using the Bureau of Explosives' Closed Drum Aparatus,† there is any explosion of the vapor-air mixture in the drum. This test consists of spraying the aerosol product into a standard 55-gallon metal drum, covered with a loose-fitting lid, in which an ignition source is located. If an explosion occurs with sufficient force to move the drum lid, the product is defined as flammable.

Any products which are not defined as "flammable" under any one of the foregoing three tests automatically are classified as "nonflammable" under I.C.C. regulations.

Pressure Regulations

a.) General:

ONCE an aerosol product has been determined to be either "flammable" or "nonflammable" under the foregoing definitions, the next important step is to determine whether or not it falls within the permissible pressures under I.C.C. regulations for shipment in interstate commerce. Because regulations differ between flammable and nonflammable pressurized products, the two groups of products will be treated separately in the following sections.

As to pressure measurements, it should be pointed out that the Interstate Commerce Commission, in all instances, calls for a total pressure and it has been the practice that the pressure is that which includes any entrapped air in the container.

b.) Flammable Aerosols:

In order to simplify understanding of the Interstate Commerce Commission pressure regulations, flammable aerosols can be considered to fall into four groups:

GROUP 1. *Packages with dispensing pressures less than 40 pounds per square inch absolute (approx-*

*In this case the product is sprayed into an open drum in which a candle is burning. If any of the vapors ignite, either at or apart from the ignition source, the product must be classified as flammable. This ignition need not be continuous but can be intermittent and fleeting.

†A description of the Bureau of Explosives' Flame Projection Apparatus, Open Drum Apparatus, Closed Drum Apparatus and method of tests may be obtained from the Bureau of Explosives, 30 Vesey Street, New York 7, N. Y.

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imately 25 pounds per square inch gage) at 100°F. (Note: this provision applies only to flammable products; higher pressures are permissible with nonflammable products as discussed in a later section.) It should also be noted that this is the only product category in which the significant temperature is 100°F. In all other cases, the significant temperature specified in the I.C.C. regulations is either 70°F. or 130°F.)

Group 1 products are defined as "pressurized flammable liquids" and the type container and packaging required is covered in Section 73.142 of Tariff No. 9. The normal metal aerosol-type container of not more than 16.6 fluid ounces capacity is permitted and each and every filled and completed container must be heated to 130°F. "without evidence of leakage, distortion, or other defect" of the container. Acceptable outer shipping containers are Specification 12B fiberboard boxes or Specification 15A, 15B, 15C, 16A, or 19A wooden boxes, and all such outside shipping containers must carry the regular red label for a flammable liquid, as described in Section 73.405 of the I.C.C. Tariff No. 9. Outside package must also be marked with name of contents as provided by Section 73.401.

At the present time, there is no standard method for determination of pressure in aerosol products. For some time, however, a committee within CSMA has been working on this problem in cooperation with the Bureau of Explosives. It is expected that this committee will publish an accurate reference method in the near future.

GROUP 2. *Packages with dispensing pressure above 10 pounds per square inch absolute (approximately 25 pounds per square inch gage) at 100°F. but below 55 psia (approximately 40 psig) at 70 F., which DO NOT flash back to the valve or sustain a flame at any degree of valve opening.*

Such products are defined as "flammable compressed gas" under Section 73.306 (d) (1) of Tariff No. 9. The permissible inner and outer containers are the same as for Group 1 products. The outside shipping carton or box must be labelled with the prescribed red diamond indicating a "flammable compressed gas," as described in Section 73.408 (1) of Tariff No. 9. Outside package must also be marked with name of contents as provided by Section 73.401.

GROUP 3. *Packages with dispensing pressures above 55 pounds per square inch absolute (approximately 40 pounds per square inch gage) at 70°F. but not over 75 pounds per square inch absolute (approximately 55 pounds per square inch gage) at 70°F., which DO NOT flash back to the valve or sustain a flame at any degree of valve opening.*

These products also fall under Section 73.306 (e) (2) of Tariff No. 9 and differ from Group 2 in only two respects: (a) The required inner container is a 2P Specification container, as described in Section 78.33 of Tariff No. 9, and (b) The outside shipping container must not only carry a "flammable compressed gas" red diamond label but must also be plainly marked, "Inside containers comply with prescribed specifications," as described in Section 73.408 (1) of Tariff No. 9. Most aerosol paint products today fit in the Group 3 specification. Outside package must also be marked with name of contents as provided by Section 73.401.

GROUP 4. This group covers two categories of products:

1. *Packages with dispensing pressures above 75 pounds per square inch absolute (approximately 60 pounds per square inch gage) at 70°F., regardless of whether or not they flash back or sustain a flame.*
2. *Packages with dispensing pressures below 75 psia (approximately 60 psig) at 70°F. but over 40 psia (approximately 25 psig) at 100°F. which DO flash back to the valve or sustain a flame at any degree of valve opening.*

Such products, which incidentally are of no known interest to the aerosol industry today, require shipping cylinders rather than normal aerosol cans. Otherwise, they are subject to the regulations of Section 73.301of Tariff No. 9

c.) Nonflammable Aerosols:

Nonflammable and nonpoisonous aerosol products are regulated by the Interstate Commerce Commission solely on the basis of their use of a compressed gas, as outlined in Section 73.300 of Tariff No. 9. Regardless of the pressure provided by the compressed gas used in them, all nonflammable aerosols with the exception of foodstuffs and soaps, have one thing in common so far as the Commission's regulations are concerned. Each and every filled and completed container to be shipped in interstate commerce must be subjected to a temperature of 130°F. to assure its freedom from leakage, distortion or other defect.

In order to simplify understanding of the Interstate Commerce Commission pressure regulations, nonflammable aerosol products can be considered to fall into five groups, as follows:

GROUP 1. *Packages with dispensing pressures below 10 pounds per square inch absolute (approximately 25 pounds per square inch gage) at 70° F.*

Under I.C.C. regulations such products, made up largely at the present time of those aerosol products packaged in glass or plastic containers, do not fall within the definition of a compressed gas. Therefore, under I.C.C. regulations, there are no restrictions on inside packaging. This means that products in

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this pressure group may be shipped in interstate commerce without any special warning labels and require only such outside packaging as the individual tariffs of the carriers make necessary for in-transit protection.

GROUP 2. *Packages with dispensing pressures above 40 pounds per square inch absolute (approximately 25 pounds per square inch gage at 70 F. but not over 55 pounds per square inch absolute (approximately 40 pounds per square inch gage) at 70 F.*

This group of products, which includes the majority of current "low pressure" aerosol products, falls under the I.C.C. regulations and is described in Section 73.302 (a) (3) of Tariff No. 9. Specified container is the inside nonrefillable metal type with a maximum capacity of 16.6 fluid ounces. I.C.C. specification for outside shipping containers are not required.

GROUP 3. *Packages with dispensing pressures above 55 pounds per square inch absolute (approximately 40 pounds per square inch gage) at 70 F. but not over 75 pounds per square inch absolute (approximately 60 pounds per square inch gage) at 70 F.*

This group of products which includes many current paint products and several of the more or less standard aerosol products described as "high pressure," falls under the I.C.C. regulations and is described in Section 73.306 (b) (1) of Tariff No. 9. Required container is a specification 2P container which must comply with the requirements of Section 78.33 of Tariff No. 9. This section specifies the type of construction, minimum wall thickness, and certain pressure tests to which the can manufacturers must subject each lot of cans.

This provision of the Tariff also requires that every outside shipping container (i.e. corrugated cardboard box) be stencilled or otherwise plainly marked with the legend, "Inside containers comply with prescribed specifications." A green compressed gas level, as specified in Section 73.408 (a) (2) of Tariff No. 9, must be affixed to the outside shipping carton. Outside package must also be marked with name of contents as provided by Section 73.401.

GROUP 4. *Packages with dispensing pressures above 75 pounds per square inch absolute (approximately 60 pounds per square inch gage) at 70 F.*

This group of products covered by Section 73.301 of Tariff No. 9, are those packed in specification cylinders of the type used by the aerosol industry during World War II. Because such containers are of limited interest to the aerosol industry today, no details will be given here.

GROUP 5. *Foodstuffs or soaps with dispensing pressures above 40 pounds per square inch absolute (approximately 25 pounds per square inch gage) at 70 F. but not over 105 pounds per square inch absolute (approximately 90 pounds per square inch gage) at 70 F. or 140 pounds per square inch absolute (approximately 125 pounds per square inch gage) at 130 F.*

Attention is called particularly to the two pressure-temperature limits specified for this group of products under Section 73.302 (a) (5) of Tariff No. 9. The latter section of the I.C.C. regulations, states that the same type of can used for other aerosol containers may be used for foodstuffs or soaps but must "be capable of withstanding without bursting a pressure of two times the pressure of the contents at 70°F. or 1½ times the pressure of the contents at 130°F. whichever is greater."

This provision applies to the whipped cream packages and is now being used to cover shaving cream aerosol products.

It should be noted that this is the only group of aerosol products which does not require testing at 130°F. under Interstate Commerce Commission regulations. However, most aerosol loaders feel the 130°F. test is of importance in guaranteeing (1) a leakproof package which will satisfy the customer, and (2) a degree of insurance that the package is properly seamed and will not rupture under normal handling by the retailer or the customer.

Glass or Plastic Containers

GLASS or plastic containers as such are not covered in existing Interstate Commerce Commission regulations. It would appear, however, that if a glass or plastic package contains a *nonflammable* material, any pressure under 40 pounds per square inch absolute (approximately 25 pounds per square inch gage) at 70°F. would be acceptable.

If any package contains a *flammable* mixture at *any* pressure between atmospheric and 40 pounds per square inch absolute at 100°F. and uses a gas as an expellent it falls within the regulations of the Interstate Commerce Commission as a pressurized flammable liquid, as defined in Section 73.115 (b) of Tariff No. 9. Inside containers for pressurized flammable liquids are required to be metal cans (Section 73.142 (a) (1).) This means, of course, that such flammable products cannot be shipped in glass or plastic containers.

Post Office Regulations

THE Post Office Department recently has revised its regulations to permit parcel post mailing

(*Turn to Page* 166)

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Table 3. Percentage Recovery of "M. Pyogenes" Var. "Aureus" Exposed at 25°C and Various Relative Humidities to Various Surfaces Coated with a 1 Percent Phenolic Mixture

Time (min)	Percent RH	Type of surface: Glass	Inlaid linoleum	Asphalt tile	HBT (cotton)	Wool serge	Wood
	1	100	87	100	100	100	100
	33	56	100	100	100	100	100
15	50	0	69	77	100	100	100
	75	0	14	17	100	100	100
	98	0	27	0	85	100	100
	1	100	63	100	100	100	100
	33	9	93	84	100	100	100
240	50	0	0	0	100	100	100
	75	0	0	0	60	100	100
	98	0	0	0	0	2.5	100

Disinfecting Surfaces

(*From Page* 138)

to us to be the most useful. In the course of tests upon this method, we made some observations relative to the number of organisms that could be removed from different surfaces. With vegetative cells, the continuous death of organisms complicated this effect, and so some tests were performed employing the spore form of *Bacillus subtilis* var. *niger* (*Bacillus globigii*), which is highly resistant to the killing effects of the atmosphere. Most of the factors listed in Table 1 were investigated, using various media for suspending the spores prior to aerosolization. It was necessary first to establish a base line or control surface, from which the deposited spores could be quantitatively removed. For this purpose we employed a cellulose filter paper (Chemical Corps Type 5)* which disintegrated completely upon shaking in water. As a further check we employed soluble polyvinyl alcohol films**, a technique suggested by Dr. Bernard Witlin of the Philadelphia College of Pharmacy. While these films did dissolve completely, they were less desirable than the filter paper, for the small pieces required were difficult to handle and partially dissolved at high humidities. The two surfaces, however, yielded identical numbers of spores when inoculated similarly. In Table 4 are shown the recoveries from various inoculated surfaces when they were shaken in either distilled water or in blanks containing a 0.1 percent solution of a non-ionic detergent. The greater effectiveness of the detergent-containing blank was striking but not surprising. More surprising was the marked differences between spore recoveries from different surfaces. The results indicated in Table 4 agree well with those obtained by Ridenour and Armbruster (20), who employed a radioactive tracer technique, and represent differences in physical recovery. In actual tests with vegetative cells, these differences due to the nature of the surface are confounded by differences due to "die-away" of organisms.

*C. H. Dexter & Sons, 100 Canal St., Windsor Locks, Conn.

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Table 4: Percent Recovery of "B. Subtilis" Var. "Niger" from Various Surfaces Using Distilled Water and 0.1 Percent Non-Ionic Detergent Dilution Blanks

Surface	H_2O blanks	0.1% detergent blanks
Filter paper	100	100
Stainless steel	85	99
Asphalt tile	85	100
Clean glass	70	92
Cotton cloth (herringbone twill)	44	83
Wool serge	40	100
Wood (pine)	17	87
Aluminum	9	27

The cleanliness of the glass surface had a marked effect upon the recovery of spores, as indicated in Table 5, where all recoveries are expressed as percentages of those obtained from filter paper or plastic test surfaces.

Conclusions

IT is realized that this test method may not represent the closest possible approach to actual conditions under which contaminated surfaces are found, nor may it be practical in its present form, as a disinfectant test procedure to be employed by regulatory or purchasing agencies. As has been indicated, the method was designed simply to provide more information on the role of the many variables involved in the determination of the effectiveness of a self-disinfecting surface, and to permit some quantitative results to be obtained.

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Table 5: Percentage Recovery of "B. Subtilis" Var. "Niger" from Glass, Clean and Treated, Using Distilled Water and 0.1 Percent Non-Ionic Detergent Dilution Blanks

Surface	Treatment	H_2O blanks	0.1% Detergent blanks
Glass	Clean	70	92
Glass	Rubbed between fingers .	50	75
Glass	Coated with paste floor wax, rubbed and let stand 24 hours	34	68

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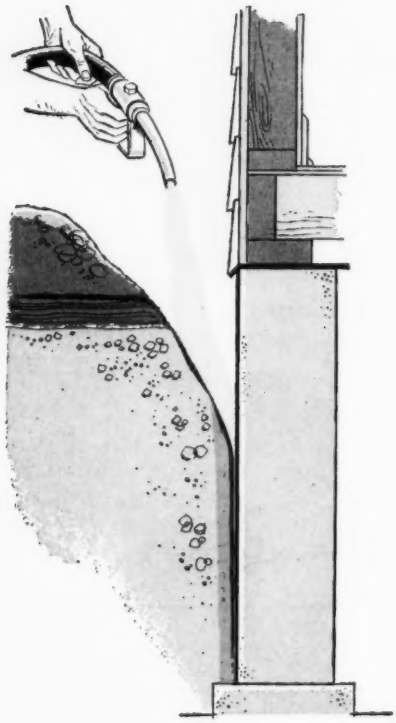

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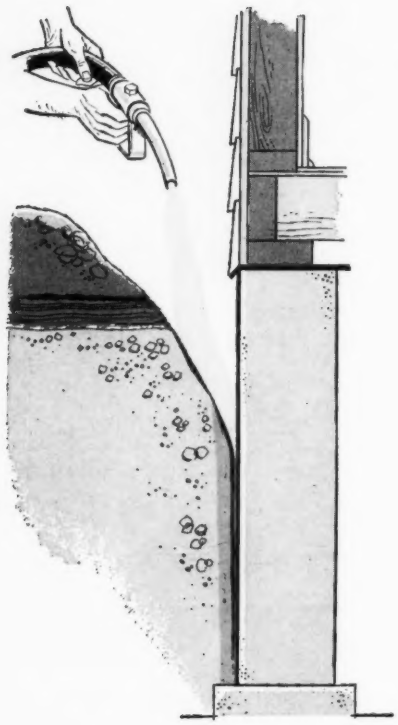

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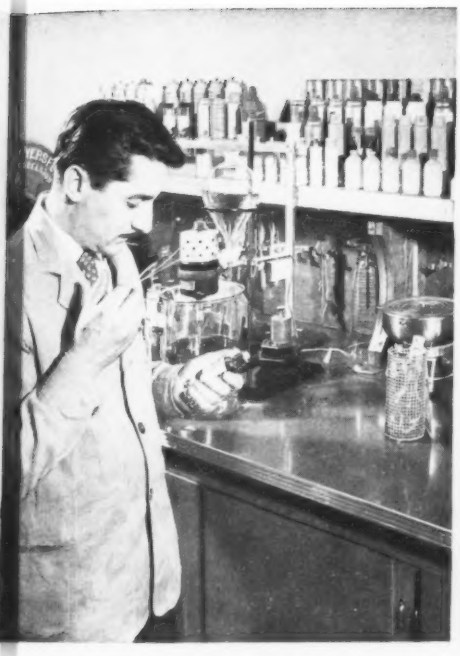

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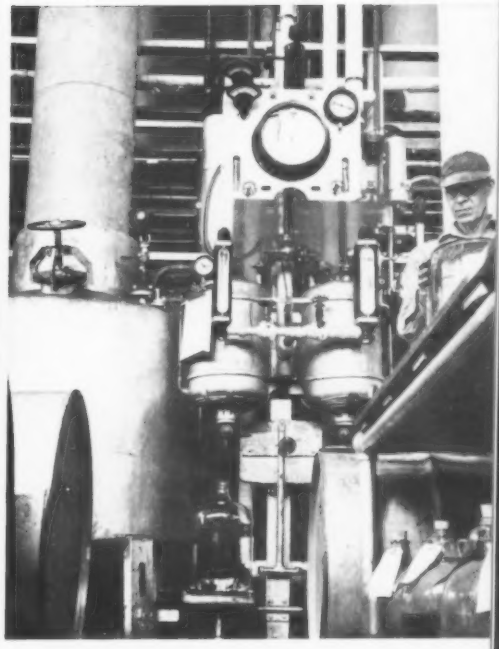

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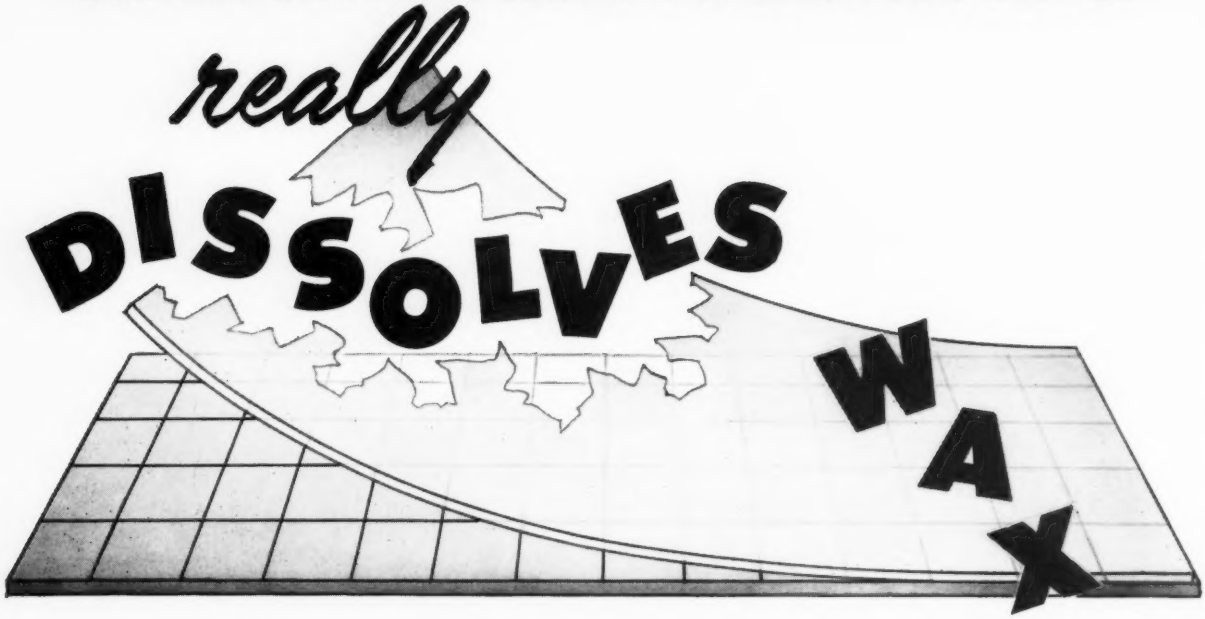

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Better Poison Residue Test

An improved fly bioassay for the detection of poison residues in food has been developed by William M. Hoskins, professor of entomology and parasitology at the University of California and his assistants W. R. Erwin and Dora Schiller. The research workers found a way of eliminating waxy and oily substances obtained from foodstuffs in the extraction process. These substances had previously falsified results by their lethal effects on the laboratory test flies.

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Pesticide Plant Effluent

Effluent from a plant making insecticides and weedkillers was found to be of strongly bactericidal nature, making biological treatment, as commonly applied to organic chemical effluents, unsuitable. Absorption treatment was resorted to. A process was developed consisting of activated charcoal treatment, copper removal treatment, and finally biological treatment. The system described removes by charcoal about 90 percent of the aromatic subtances present in the effluent. Substances giving rise to high oxygen absorbed from B.O.D. are reduced by the charcoal treatment by some 80 percent. The biological filtration system reduces the remaining phenols by 90 percent and glycollic acid by 80 percent, effecting a reduction in oxygen absorbed of over 40 percent and B.O.D. by over 70 percent. Aeration causes further improvement, notably to B.O.D. D. H. Sharp and A. E. Lambden before London Section of Society of Chemical Industry, through *Manufacturing Chemist*, May 1955, pp. 210 and 215.

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Mechanism of Insecticides

The mechanism of the effects of contact insecticides is hypothetically explained as follows: Stimuli transmitted through the nerves from distant organs arise from an impulse force of electromagnetic character, every impulse corresponding to a definite frequency. Contact insecticides possess characteristic frequencies lying in the range of vital frequencies in the nervous system, which are caused by definite atomic groupings. The grouping about the C atom of DDT and HCH causes this frequency partly through the presence of an H atom, the atomic arrangement, and the bond character of the rest of the molecule. There exists a close relation between the electromagnetic frequencies of the insecticides and of the biological catalysts in the insect body (such as hormones, enzymes) in response to a given impulse. The appearance of resistance after repeated exposure to the insecticides over a period of time is explained by the ability of the body to cause by evolutionary processes change of the electromagnetic frequency of the vital functions. O. Seipold, *Chem.Tech.* (Berlin) 6, 203-6, 1954.

—— ★ ——

New Merck Catalog

Merck & Co., Rahway, N. J., published last month a new catalog of its laboratory chemicals. The 1,000 or more items listed include a number of new solvents designed for spectrophotometric use. Storage suggestions, temperature conversion tables and metric equivalents are included.

Pennsalt Names Sales Execs.

Advancement of two sales executives by Pennsylvania Salt Manufacturing Co., Philadelphia, was announced last month by Albert H. Clem, general manager of the Chemical Specialties Division. J. Stanley Hall, formerly sales manager of the laundry and dry cleaning products department, becomes sales director of the Chemical Specialties Division. In this newly created post he is responsible for the national sales activities of the laundry and dry cleaning chemicals, metal processing, "B-K" food sanitizing products, corrosion engineering, and household products departments. With Pennsalt since 1932, Mr. Hall has been a sales manager since 1943. He has served six years as a board member of the Laundry and Dry Cleaners Allied Trades Association and two terms as the group's president.

Paul C. Hurley, manager of advertising and sales promotion since 1950, succeeds Mr. Hall as sales manager of the laundry and dry cleaning department. He served previously as sales representative, sales training supervisor, and merchandising manager, successively. Before joining Pennsalt in 1943 he was with Kansas City Laundry Service.

—★—

Louis G. Huge Dies

Louis G. Huge, 66, president of Huge Co. and of American Sanitation Institute, St. Louis, Mo., died July 9. The Huge organization makes insecticides and acts as sanitation consultant for food plants. Mr. Huge is survived by his widow and by a son, Thomas.

Aerosol Regulations

(*From Page* 161)

of any package acceptable to the Interstate Commerce Commission, provided such package meets normal Post Office Department restrictions as to size and weight. (i.e., maximum of 40 pounds in first and second zones and 20 pounds in the third to eighth zones; dimensions not exceeding 72 inches, length and girth combined.)

An authoritative discussion of parcel post regulations concerning the aerosol industry appeared in the March 1955 issue of *Soap and Chemical Specialties* magazine, official journal of the Chemical Specialties Manufacturers Association. Reprints of the article may be obtained from CSMA or from the magazine (254 West 31st Street, New York 1, N. Y.)

Among pertinent passages in the U. S. Postal Manual, issued October 18, 1954, Section 125.23c states:

> "Compressed gas containers shall be of metal or nonshattering steel types, as required by the Interstate Commerce Commission or other Federal agencies. In addition to being cushioned to absorb shock, containers with release mechanisms shall be protected against damage or accidental discharge in transit."

Flammable materials are referred to in Section 125.23a of the Postal Manual, while glass packages are mentioned in Section 125.22c.

The Manual should be consulted for details of permitted products, packaging and other rules and regulations dealing with the use of the U. S. mails.

U.S.D.A. Regulations

ALL products which are insecticides or which in some way control insect life or relate to it, including insect repellents and products which are described as sterilizers of the air, must be registered with the U.S.D.A. under the Federal Act covering rodenticides, insecticides, and fungicides. Herbicides also are included under this Act.

Registration of products under the Federal Act is handled by the office of the Agricultural Research Services, Plant Pest Control Branch, Pesticide Regulation Section, Washington 25, D. C. The details of such registration are too lengthy to be covered here.

U. S. Dept. of Health, Education, and Welfare

THIS agency is of growing importance to the pressure-packaging industry because its U. S. Food and Drug Administration is responsible for administering the Federal Food, Drug, and Cosmetic Act. Not only do all aerosol food, drug, and cosmetic products fall within the regulatory authority of this agency, but any products claiming curative benefits must conform to provisions of the drug portions of the act before being offered for sale in interstate commerce.

C.S.M.A.

THE Chemical Specialties Manufacturers Association with offices at 50 East 41st St., New York 17, N. Y. serves as the national trade association for the aerosol industry as one phase of the chemical specialties field. It maintains close relations with the various governmental regulatory bodies and serves the industry both in an advisory capacity and as a central clearing house for information regarding changes or proposed changes in regulations affecting it. Among the available publications of the CSMA are the "Compilation of Economic Poison Laws" and "Agencies and Regulations of Interest to the Pressure Packaging Industry."

In many instances, government regulatory bodies consult the CSMA as to the industry's views regarding proposed revisions of their rules and regulations.

Acknowledgement

The assistance of companies interested in the aerosol industry is gratefully acknowledged.

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Shore Metal Changes Name

Shore Metal Products Co. has changed its name to Shore-Calnevar, Inc., it was announced last month by Philip Shore, president. The company is located at 2881 E. Pico Blvd., Los Angeles 23.

SIMPLIFIED TABLE OF ICC REGULATIONS AFFECTING THE AEROSOL INDUSTRY
All Paragraph References Are From ICC Tariff No. 9, Supplement No. 4, May 3, 1955

Atmospheric Pressure	More than 40 psia @ 100°F	55 psia @ 70°F	75 psia @ 70°F
	PRESSURIZED FLAMMABLE LIQUID	FLAMMABLE COMPRESSED GAS 73.300 (b) (2) (3) (4) May not sustain a flame or flashback—73.306 (d)	FLAMMABLE COMPRESSED GAS 73.300 (b) (2) (3) (4) May not sustain a flame or flashback—73.306 (d)
FLAMMABLE according to: 73.115 (b) (1), (2), (3) or 73.300 (b) (2), (3), (4) and NONPOISONOUS Below 40 psia @ 70°F. or 104 psia @ 104°F or both	73.115 (b) (1) (2) (3)		
	Packaging: Inner — Metal Can 73.142 (a) (1)	Packaging: Inner — Metal Can 73.306 (d) (1)	Packaging: Inner — Spec. 2 P Can 73.306 (d) (2) and 78.33
	Outer — Wood or Fiber boxes 73.142 (a) (2) (3)	Outer — Wood, Fiber boxes 73.306 (d) (1)	Outer — Wood, Fiber boxes 73.306 (d) (2)
	Label: Red — 73.402 (a) (1) and 73.405	Label: Red—73.402 (a) (4) and 73.408 (a) (1)	Label: Red—73.402 (a) (4) and 73.408 (a) (1)
	Marking: Name of Contents 73.401	Marking: Name of Contents 73.401	Marking: Name of Contents 73.401 plus "Inside Containers Specifications 73.306 (d) (2)
	Heat to 130°F—Capable of 73.142 (a) (2) (3)	Heat to 130°F—Yes 73.306 (d) (1)	Heat to 130°F—Yes 73.306 (d) (2)

	40 psia @ 70°F			105 psia @ 70°F or 140 psia @ 130°F
	NON-REGULATED	COMPRESSED GAS 73.302 (a) (3)	COMPRESSED GAS 73.306 (b) (1)	COMPRESSED GAS 73.302 (a) (5) Soaps and Foodstuffs only
NONFLAMMABLE and NONPOISONOUS Compressed gases 73.330 (a) (over 40 psia @ 70°F. or 104 psia @ 104°F. or both.)	Packaging: Inner — Only area where glass or plastic inside containers may be used.	Packaging: Inner — Metal Can 73.302 (a) (3)	Packaging: Inner — Spec. 2 P Can 73.306 (b) (1) and 78.33	Packaging: Inner — Metal Can — "capable of withstanding two times pressure of formulation at 70°F or one and one-half times at 130°F, whichever is greater."
	Outer — Per individual Carrier tariffs	Outer — Not specified Carrier tariff only	Outer — Wood, Fiber boxes 73.306 (b) (1)	Outer — Carrier tariff only
	Label: None required	Label: None required	Label: Green 73.402 (a) (5) and 73.408 (a) (2)	Label: None required
	Marking: None required	Marking: None except for water shipment, and then name of contents only 73.302 (a) (3)	Marking: Name of Contents 73.401 plus: "Inside...specs" 73.306 (b) (1)	Marking: None required except water shipments and then name of contents only.
	Heat to 130°F—Not required	Heat to 130°F—Yes 73.302 (a) (3)	Heat to 130°F—Yes 73.306 (b) (1)	Heat to 130°F—Not required

All Pressures are *Absolute*—Subtract 14.7 for Gauge Pressure; All Temperatures are in °F.

TO USE THIS TABLE: Determine whether or not product is flammable or non flammable, determine pressure of product at appropriate temperature, enter proper box and read shipping regulations. Refer to Tariff 9 for complete details.

EXAMPLE: Product gives a flame extension of 24" when tested according to 73.300 (b) (2) and is therefore flammable. It does not flashback or sustain a flame. Pressure at 70°F is determined to be 50 psig (65 psia). Product is thus classified as a "Flammable Compressed Gass." Enter box between appropriate pressures (between 55 @ 70 and 75 @ 70) and read shipping regulations.

IS YOUR AEROSOL FORMULATION

HIGHLY EFFECTIVE

against . . .

ROACHES AND FLIES

and SAFE TO USE in the KITCHEN

"NEW IMPROVED"

SULFOXIDE

the SUPERIOR Synergist for

Pyrethrum is your ANSWER

REMEMBER—
NO NASAL IRRITATION
WITH NEW IMPROVED
SULFOXIDE

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Cut your materials costs with

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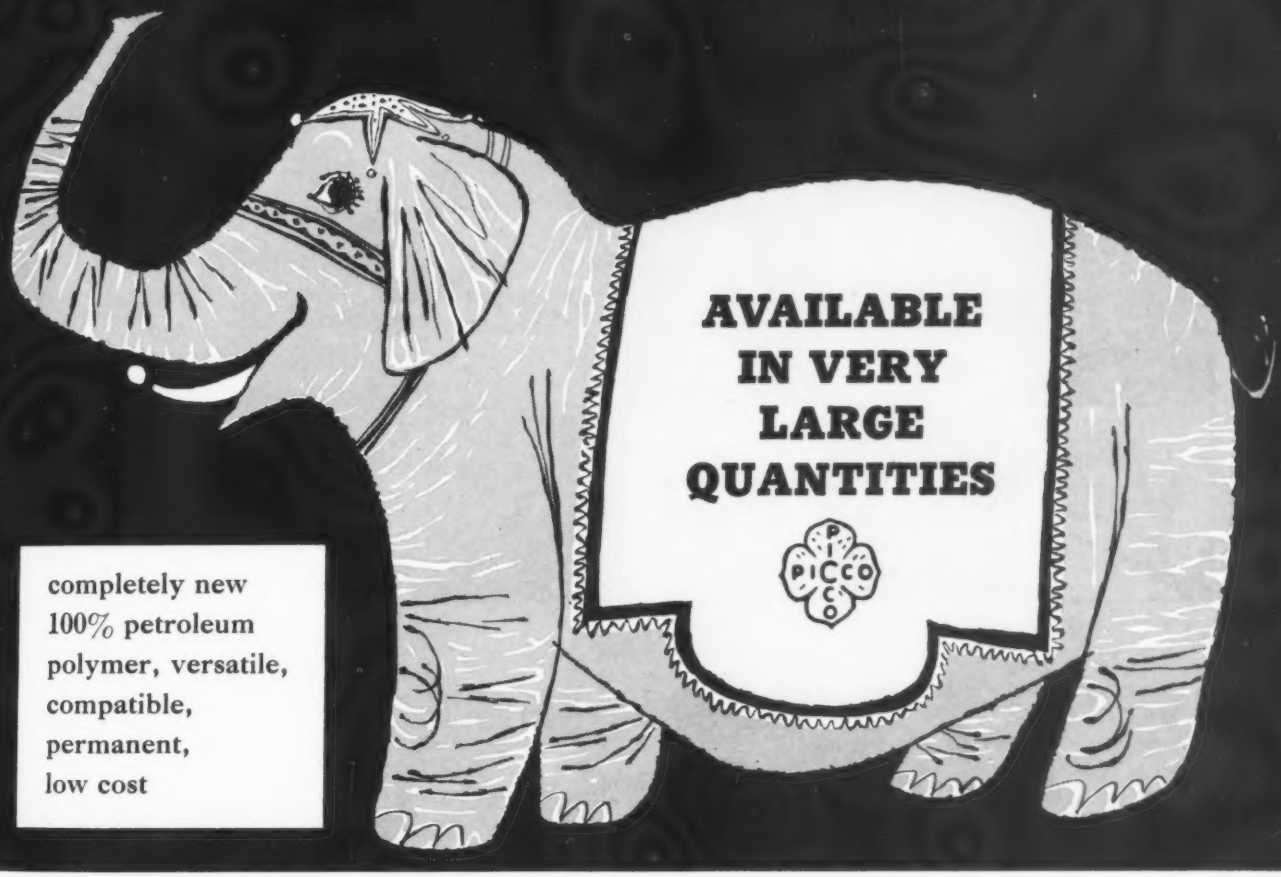

completely new
100% petroleum
polymer, versatile,
compatible,
permanent,
low cost

The extremely low cost of PICCOPALE, and its availability in enormous quantities make this new type of petroleum resin ideal for use as a basic raw material in applications where previous types of resins were not practical. It is chemically inert—not affected by acids and alkalies; moisture-proof; compatible with waxes, rubbers, polyethylene, coumarone-indene resins, phenolics, rosins, many alkyds, vinyls, drying oils and many other materials. PICCOPALE is soluble in naphthas, chlorinated and other solvents. Available in liquid solution or in flaked or solid form.

WRITE for complete data, specifications and samples.

Technical Service

Pennsylvania Industrial Chemical Corporation operates an exceptionally well-equipped laboratory for technical research involving the use and application of Picco products. This Technical Service can be of great help in developing the best methods of using Picco products in your formulations.

Pennsylvania Industrial Chemical Corp.
Clairton, Pennsylvania

Plants at:
Clairton, Pa.; West Elizabeth, Pa.; and Chester, Pa.

District Sales Offices
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Pennsylvania Industrial Chemical Corp. (S)
Clairton, Pennsylvania

Please send me a copy of your bulletin describing PICCOPALE and samples of grade for (application)_____

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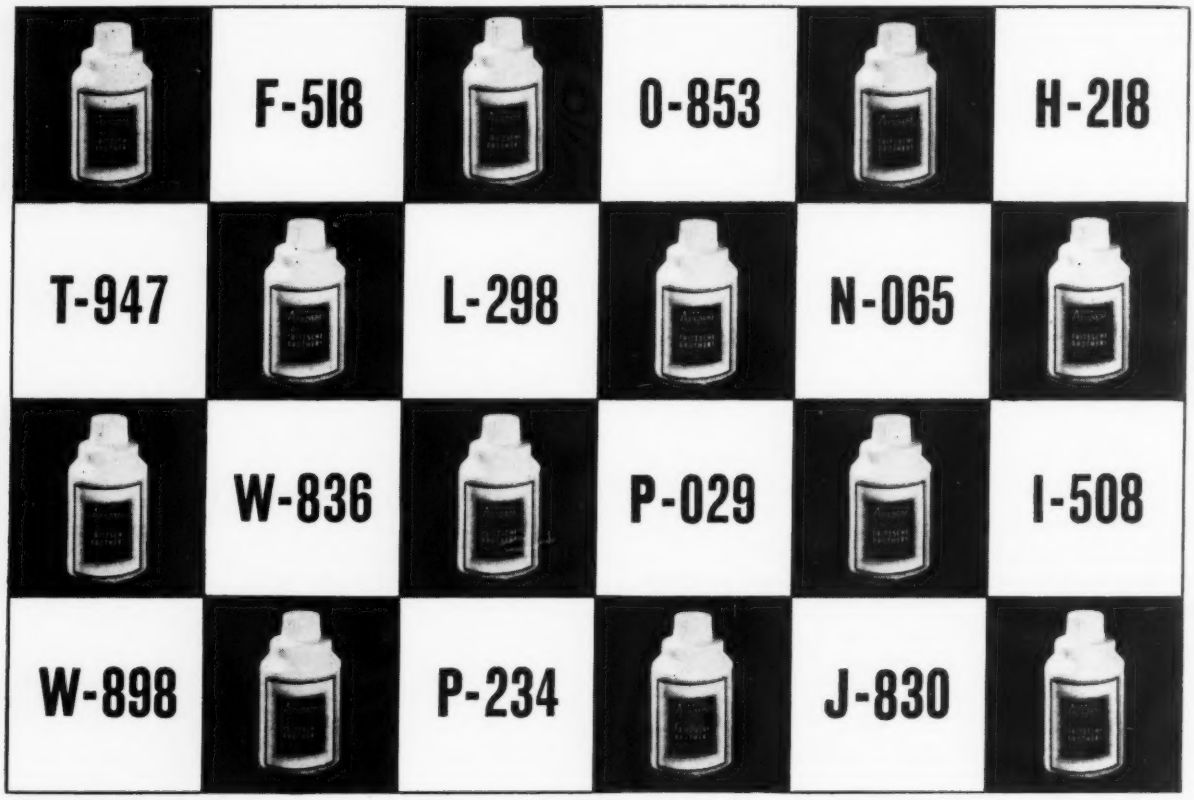
Name_____ Position_____

Company_____

Address_____



HERE'S ONE "NUMBERS" GAME YOU CAN'T LOSE!

. . . And do you know why? Because each of these numbers is a proven winner—***proven in commercial use!*** They are the formula numbers that identify certain very successful fragrances developed by our Industrial Odorant Laboratories for various applications suited to aerosol packaging. A key to their uses is given in the adjoining column. Look them over and if you find among them any that are of interest, write us for testing samples . . . or better still, forward us an ***unperfumed*** sample (8 oz.) of your product and let us perfume it for you. We'll return it to you in aerosol dispenser, ready for testing, correctly odorized with the number selected. You've nothing to lose and you may very likely chance upon a fragrance that will give a real lift to your product's future sales.

KEY TO FORMULA NUMBERS

F-518 Insecticide Odorant	$3.00 lb.
O-853 Room Odorant	$6.75 lb.
H-218 Paint Deodorant	$3.75 lb.
T-947 Fire Extinguisher Odorant	$2.25 lb.
L-298 Polish Odorant	$3.00 lb.
N-065 Moth Proofer Odorant	$1.50 lb.
W-836 Hair Lacquer Fragrance	$5.25 lb.
P-029 Shave Lather Perfume	$3.75 lb.
I-508 Artificial Snow Odorant	$2.50 lb.
W-898 Cologne Perfume	$15.50 lb.
P-234 Insecticide Odorant	$4.25 lb.
J-830 Polish Odorant	$5.50 lb.

FRITZSCHE *Established* 1871 *Brothers, Inc.*

PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N. Y.

BRANCH OFFICES *and* *STOCKS: *Atlanta, Georgia, Boston, Massachusetts, *Chicago, Illinois, Cincinnati, Ohio, Cleveland, Ohio, *Los Angeles, California, Philadelphia, Pennsylvania, San Francisco, California, St. Louis, Missouri, *Toronto, Canada and *Mexico, D. F. FACTORY: *Clifton, N. J.*

News

Lee Barr Vice-President

G. Barr and Co., aerosol fillers, elected Harold V. Lee as vice-president in charge of the New York

Harold V. Lee

plant, it was announced recently by George Barr, president. In his newly created position Mr. Lee is in charge of all of the New York plant's operations, including development laboratory, production, and sales. He joined the company a year ago when it opened the New York branch. Previously he was associated with Revlon Products Corp., New York.

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Parks to Clorox

Thomas D. Parks has been appointed director of research for Clorox Chemical Co., Oakland, Calif., effective Sept. 1, it was announced last month by W. J. Roth, president. He will work with L. J. Barton, vice-president, who developed the patent under which "Clorox" is being manufactured. To accept the Clorox appointment Dr. Parker is relinquishing his position as chairman of the department of chemistry and assistant director of the physical sciences division of Stanford Research Institute, where he had been since 1950. His previous associations include the War Production Board and Shell Development Co.

Thomas D. Parks

— ★ —

Kansas Plant for Selig

Selig Co., Atlanta, opened a new branch in Kansas City, Mo., August 1. The new facilities include manufacturing space, offices, display room, warehouse, and shipping department and will service accounts in Kansas City, Nebraska, Iowa, Missouri, and Kansas. Established in 1896, the company has branches in Houston, Dallas, and New Orleans.

— ★ —

CSMA Luncheon Sept. 28

A luncheon for all members of the Chemical Specialties Manufacturers Association will be held in New York on Sept. 28 at the Savoy Plaza Hotel. This luncheon will precede the fall meeting of the Board of Governors of CSMA on Sept. 29, according to H. W. Hamilton, secretary. A feature of the luncheon will be reports on economic conditions in Europe, especially in the chemical products field, by several CSMA members.

— ★ —

Morey Joins Puritan

Appointment of D. James Morey as sales manager of the aerosol filling division of Puritan Distributing Co., Boston, Mass., was announced recently by A. Winer, president. Mr. Morey resigned from Bridgeport Brass Co., Bridgeport, Conn., where he had been supervisor of research and development of the aerosol division, to accept the Puritan appointment. His efforts will be devoted to problems arising in contract and custom filling of aerosol and pressurized containers for the trade. Mr. Morey

D. James Morey

is in full charge of aerosol sales and marketing for Puritan. He is serving on committees of the Chemical Specialties Manufacturers Association and the Compressed Gas Association.

— ★ —

Pletcher a Penick VP

Election of Harold E. Pletcher as a vice-president of S. B. Penick & Co., New York, was announced last month. Mr. Pletcher, who was made production manager last year, will continue to be responsible for manufacturing operations of Penick and of its subsidiary, New York Quinine & Chemical Works,

Harold E. Pletcher

WHEN YOUR CUSTOMERS SAY:

"I want floor sweeps that last longer and save me money..."

... sell them on OXCO

***Master Blend* Floor Sweeps**

PROVEN TO LAST 3 TIMES LONGER

Unretouched photo shows an all-hair sweep (left) and OXCO "Master Blend" sweep (right) after continuous 500-mile sweeping test by an independent research laboratory. Notice, the SARAN-horsehair blended filling is worn only ⅓ as much as the all-hair filling . . . did not mat at all.

AND, FLOOR SWEEPS ARE ONLY A STARTER

The sales power of "Master Blend" Floor Sweeps is a natural "toe-in-the-door" that'll help you sell the full OXCO line of maintenance brushes—sweeps, dusters, radiator brushes, window brushes—all "Master Blend" filled . . . *plus* a fine line of quality bowl brushes, both twisted and wrapped in wire.

Easy, immediate sales . . . and better-satisfied customers mean greater volume and higher profits for you. Start now . . . get the whole story from your OXCO Representative, or write direct for Catalog No. 53 and Current Jobber Price List, with specifications and prices on the complete "Master Blend" line.

OXCO BRUSHES

OX FIBRE BRUSH COMPANY, INC.

FREDERICK *Established 1884* MARYLAND

For: Repacking • Compressing • Dissolving
Molding • Coloring

be sure to specify *premium quality*

ORTHODICHLOROBENZENE
PARADICHLOROBENZENE
NAPHTHALENE

For a premium quality product, rely on our years of experience to guarantee *you* a dependable product — high quality and uniformity in every order.

For a dependable source of supply, rely on our plant, one of the most modern in the country, for prompt and effective delivery. It is strategically located to serve *you* when you need your materials.

STANDARD CHLORINE CHEMICAL CO.

Standard Naphthalene Products Co.

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N. Y. Phone: BArclay 7-0920

Manufacturers of *Rid-O-Moth* — *One of the oldest brands in the industry*

Inc. Before joining Penick in 1951 as assistant production manager, Mr. Pletcher was associated with Ansco Division of General Aniline & Film Corp., New York.

— ★ —

Calspray Lab Expansion

Current expansion of laboratory facilities of the research and development department of California Spray-Chemical Corp., Richmond, is the beginning of a multi-million dollar expansion program by the company slated for completion late in 1956. The new laboratory facilities will be equipped for further development of improved organic and inorganic chemicals for use in "Ortho" fungicides, insecticides, and herbicides. New pesticides developed in this laboratory will be tested at the bio-screening laboratory currently being built by Calspray on the Standard Oil Company's tank farm hill near Richmond. Calspray is one of Standard's operating companies.

— ★ —

Wood Milner Vice-Pres.

The appointment of John A. Wood as vice-president and assistant general manager of Milner Products Co., Jackson, Miss., was announced recently. Mr. Wood comes to Milner from Pabst Brewing Co., where he also served as general sales manager of the Tap-A-Can Division.

A graduate of Pennsylvania State University, Mr. Wood has been associated with the food industry for 22 years in various sales capacities. Prior to joining Pabst, Mr. Wood had been with the O-Cello Division of General Mills, Inc. He has been active in the Grocery Manufacturers of America, Inc., for some years, and served as chairman of the Broker Relations Committee when it was formed in 1950. He has been an active member of this committee since then and has addressed various food groups on trade relation problems.

John A. Wood

Reilly Tar Names Two

Raymond E. McGrath has been advanced to manager and Vincent J. Hall to assistant manager of the combined Chicago plant and sales office of Reilly Tar & Chemical Corp., Indianapolis, it was announced last month by P. C. Reilly, vice-president. During 33 years with Reilly, Mr. McGrath has served in the sales dapartment and has been purchasing agent and general traffic manager. In addition to his new duties, he will continue in his capacity as general traffic manager. With the exception of three years in service during World War II, Mr. Hall has been associated with Reilly for 30 years. He served in the shipping, order and credit departments and most recently in the sales department.

Raymond E. McGrath

Vincent J. Hall

— ★ —

CSMA Aerosol Standard

A resolution accepting an insecticide aerosol standard was unanimously passed by the board of governors of the Chemical Specialties Manufacturers Association at its meeting in Chicago, May 17, 1955, it was announced recently. The resolution reads as follows: "Resolved, that the Board of Governors of the Chemical Specialties Manufacturers Association meeting in Chicago, on May 17, 1955, recognizes the Official Test Aerosol (OTA) as a minimum standard for insecticide aerosols containing 20 percent or less active ingredients." It was presented by the chairman of the administrative committee of the Insecticide Scientific Committee.

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Ask Exemption for Allethrin

Exemption from tolerance requirements for allethrin, when used on fruit and vegetables, was requested last month from Food and Drug Administration by Food Machinery & Chemical Corp., Middleport, N. Y. The agency also announced the filing of petitions by E. I. du Pont de Nemours & Co., Wilmington, Del., for establishment of tolerances for three pesticides used on raw fruits and vegetables: A tolerance of three parts per million for 3-(3,4-dichlorophenyl)-1,1-dimethylurea; a tolerance of three parts per million for 3-(p-chlorophenyl)-1,1-dimethylurea; and a tolerance of seven parts per million for manganese ethylenebisdithiocarbamate.

Puhl to Build Plant

John Puhl Products Co., Chicago, has purchased a 10-acre site in Alliance, O., to build a new plant, it was reported last month. The Alliance plant will serve a 500 mile radius with Puhle's line.

—★—

Drake Pennsalt President

William P. Drake, former executive vice-president, is now president of Pennsylvania Salt Manufacturing Co., Philadelphia, succeeding George B. Beitzel. He will continue his association with the company as a member of its board and in addition, will serve as chairman of the board of Pennsalt International Corp., a subsidiary. He joined the company in 1930 as a product sales manager and became its chief executive in 1949.

At 42 years of age, Mr. Drake is the youngest president in Pennsalt's 105-years history. With the firm for 21 years prior to assuming this office, he has longer company experience than all but one of his thirteen

William P. Drake

predecessors. Mr. Drake came to Pennsalt as a summer trainee while still an undergraduate at Bowdoin College. He started as a maintenance worker at the company's Wyandotte, Mich. works, and after three years of diversified production experience was assigned to supervisory duties in the chemical specialties department. In 1941, he became manager of this department and subsequently served as assistant vice president and vice president in charge of all company sales.

In 1952, he represented his industry in the Office of Price Stabilization as director of the rubber, chemicals and drugs division. When Pennsalt decentralized its operations in 1954, Mr. Drake became general manager of the company's largest operating unit, the industrial chemicals division. Mr. Drake was appointed executive vice-president and a director in February.

George B. Beitzel

NEVILLE

Neville Chemicals

NEVILLE

RESINS
COUMARONE-INDENE
MODIFIED COUMARONE-INDENE
STYRENATED
ALKYLATED PHENOL
OXIDIZING
PETROLEUM
RESIN SOLUTIONS
SOLVENTS
NEVSOLV
HI-FLASH
COSOL
WIRE ENAMEL
CRUDE
BENZOL
TOLUOL
XYLOL
PLASTICIZING OILS
RUBBER RECLAIMING OILS
SHINGLE STAIN OILS
NEUTRAL OILS
CHEMICAL SPECIALTIES

AROMATIC SOLVENTS

for Insecticides and Herbicides

NEVSOLV 200

Boiling Range...195°C (383°F) to 280°C (536°F)
Specific Gravity....890 to .915 Color...Straw

NEVSOLV 30

Boiling Range...130°C (266°F) to 190°C (374°F)
Specific Gravity... .835 to .845 Color...Water White

These NEVSOLVS are active solvents for DDT, BHC, 2-4-D esters, and are especially clean with good odor.

Other boiling ranges are available for particular requirements.

S5-Q

Plants • Neville Island, Pa. and Anaheim, Cal.

NEVILLE CHEMICAL CO.
PITTSBURGH 25, PA.

CHEMICALS

New Polish Stabilizer

Union Bay State Chemical Co., Cambridge, Mass., introduced recently a new dispersing agent suggested as a stabilizer in the preparation of polishes. Designated "Hycryl," the new material is an aqueous solution of a modified polyacrylate.

—★—

CSMA Aerosol Awards

The fourth annual aerosol awards will be presented at the 42nd annual meeting of the Chemical Specialties Manufacturers Association, to be held at the Roosevelt Hotel, New York, Dec. 5-7. The aerosol package competition and awards will be divided into the following 10 classes: 1. insecticides, repellents, moth proofers; 2. room deodorants; 3. lacquers, enamels, other protective coatings, paint removers; 4. other household products—polishes, glass cleaners, rug shampoos, water repellents, etc.; 5. shave products; 6. hair preparations; 7. other personal products—shampoos, body deodorants, sun tan oils, drugs, etc., 8. snow, all types; 9. industrial products—lubricants, belt dressings, stencil inks, etc.; and 10. glass and plastic packages—all products.

All entries must be made in the name of the brand owner or marketer. Entries will close Nov. 1 and all entries should be sent as soon after Sept. 20 as possible to the committee at the CSMA office. Each entry should include one completely assembled empty container with attached tag showing name and address of brand owner and class in which entry is made. Only one entry may be made by any marketer or brand owner in one class, but entries may be made in as many classes as desired. Entries are open to any aerosol brand owner or marketer anywhere, and are not restricted to members of CSMA. There are no entry fees or other charges to entrants. Best packages will be selected in 10 classes and a best package in the show will be chosen. Decisions of the judges will be final and will be announced and awards made at the 42nd annual meeting. Entry blanks and information are available from the Aerosol Awards Committee, Chemical Specialties Manufacturers Association, 50 East 41st St., New York 17, N. Y.

—★—

Petersons Resign

The resignations of Harry E. Peterson as president of Continental Filling Corp., Danville, Ill., and of Robert J. Peterson as sales manager were announced last month.

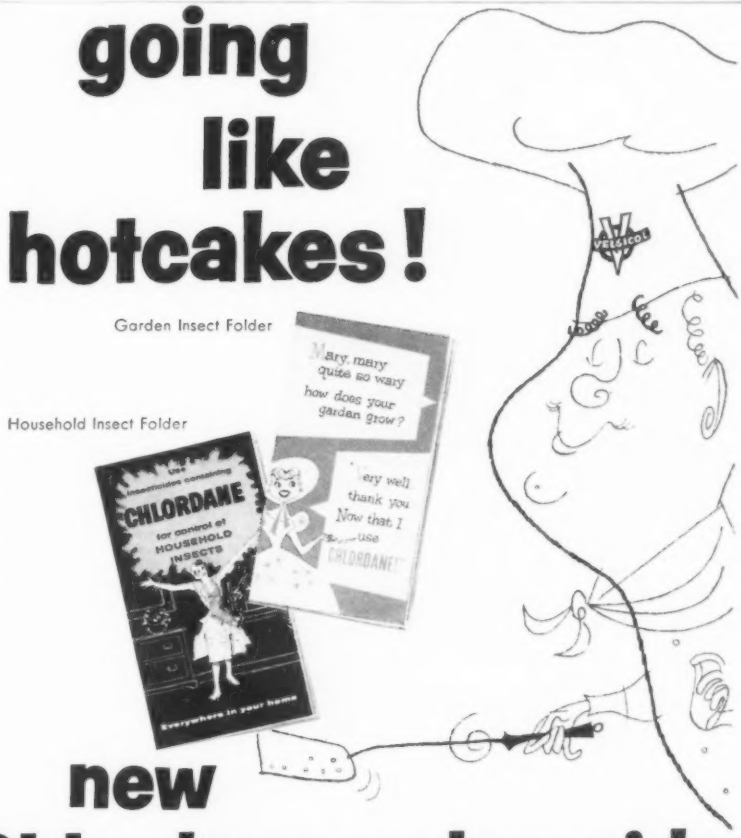
C. F. Carter, chairman of the board, has assumed the duties of president in addition to his responsibilities as chairman of the board. S. Jack Campbell, a member of the sales staff, has been appointed sales manager.

—★—

Stauffer Tacoma Plant

A new liquid aluminum sulfate plant is being constructed by Stauffer Chemical Co., New York, at Tacoma, Wash., it was announced last month. This factory will be the firm's third Western aluminum sulfate plant. It is scheduled for completion October, 1955.

going like hotcakes!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Mothproofing Woolens

(*From Page* 153)

were in an atmosphere containing the vapors of the insecticides without having any direct contact with the treated surface. The exposure period was 20 days and, periodically during that time, the number of insects dead and moribund were recorded. The results of both toxicity tests were expressed as the percent of insects dead, and dead and moribund.

Results

UNDER the conditions used in the tests, Perthane and Strobane produced no significant mortality as was the case with DDT, which was used as a standard for comparison. The two candidate insecticides showed the same degree of effectiveness in the protection rendered. Complete protection was obtained with those cloths having a deposit of 0.5 percent or above but not with those having 0.25 percent or less. The minimum effective deposit must therefore be between 0.25 and 0.5 percent by weight. The minimum deposit level for complete protection with DDT was between 0.05 and 0.10 percent or about one-fifth that reqired of Perthane or Strobane. The excrement weights were in direct correlations with the visual damage obtained. The conclusions which can be drawn from these data, therefore, are identical to those expressed above (table 1).

As would be expected with chlorinated hydrocarbon insecticides, dry cleaning had a more deleterious effect on the treated cloths than did washing. Light to heavy insect damage resulted after a single dry cleaning of the cloths having 0.5 and 3.0 percent deposits, whereas at the higher concentration no damage was present after as many as three washings. The resistance of Strobane-treated cloth to laundering was about the same as with DDT. That treated with Perthane appeared to be somewhat less resistant (table 2).

Table 6. — Percentage of dead (D) and dead and moribund (D+M) furniture carpet beetle larvae after a 24-hour exposure to treated masonite panels.

	Post-exposure in days													
Residue	1		2		6		8		10		12		14	
Mg./sq. ft.	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M
Perthane														
25	0	8	2	8	5	10	10	2	10	2	15	15	18	22
50	0	0	0	5	2	8	2	8	8	2	15	15	15	15
100	2	18	10	22	18	4	20	2	22	22	28	28	28	35
200	0	5	0	8	2	10	2	12	10	15	12	15	12	15
Strobane														
25	0	0	0	0	0	0	0	2	0	2	2	5	5	10
50	0	5	0	8	5	10	5	12	10	12	15	15	15	22
100	0	0	0	2	0	2	0	5	0	5	2	5	8	10
200	0	5	0	8	0	10	5	10	5	10	5	10	5	12
DDT														
50	0	10	3	12	3	12	3	12	3	12	5	12	5	15
100	0	15	5	15	12	15	12	15	15	15	15	15	18	20
200	2	18	2	18	5	18	10	18	12	18	15	20	22	32
Lindane														
25	0	60	0	100	30	100	55	100	68	100	72	100	80	100
50	18	100	28	100	72	100	78	100	82	100	85	100	95	100
Chlordane														
50	0	12	2	12	5	12	5	15	5	15	10	15	10	20
100	0	15	0	15	5	15	5	18	5	20	20	40	25	44
Check (untreated)														
—	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 7.—Percentage of dead (D) and dead and moribund (D+M) furniture carpet beetle larvae during a continuous 14-day exposure to treated masonite

	Exposure in days													
Residue	1		2		4		7		9		11		14	
Mg./sq. ft.	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M
Perthane														
25	0	0	0	8	10	12	10	12	10	20	20	28	25	30
50	0	10	2	10	8	18	15	30	15	30	28	33	55	62
100	0	20	0	35	8	40	30	75	45	75	58	85	72	90
200	0	22	0	25	2	45	8	65	23	65	42	70	58	80
Strobane														
25	0	0	0	0	3	3	3	3	3	3	3	5	3	5
50	0	0	0	0	0	0	0	0	0	0	3	3	3	10
100	0	0	0	10	3	10	3	12	3	20	3	22	3	22
200	0	0	0	8	3	33	3	38	3	40	3	45	3	62
DDT														
50	0	5	0	5	5	8	5	8	5	15	8	20	25	42
100	0	12	3	22	12	48	22	50	28	70	52	72	60	72
200	0	20	0	45	8	45	22	62	25	62	38	65	55	83
Lindane														
25	0	50	0	100	42	100	82	100	85	100	92	100	92	100
50	0	100	0	100	72	100	90	100	92	100	98	100	98	100
Chlordane														
50	0	15	0	22	5	32	5	45	15	45	22	48	28	60
100	0	10	0	32	8	60	8	60	10	68	10	70	32	100
Check (untreated)														
—	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Table 8.—Percentage of dead (D) and dead and moribund (D+M) black carpet beetle larvae during a continuous 20-day exposure to insecticide vapors.

Residue	Exposure in days													
	1		3		7		9		13		15		20	
Mg./sq. ft.	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M
Perthane														
25	0	28	0	28	0	28	0	28	0	30	0	30	0	40
50	0	12	0	32	0	38	0	38	0	38	0	38	0	38
100	0	18	0	20	0	30	0	30	0	30	0	30	0	30
Strobane														
25	0	0	0	0	0	0	0	5	0	5	0	12	0	12
50[1]	—	—	—	—	—	—	—	—	—	—	—	—	—	—
100	0	0	0	0	0	0	0	2	0	15	0	15	0	28
Lindane														
25	0	100	0	100	20	100	28	100	68	100	82	100	100	100
50	0	100	0	100	15	100	20	100	72	100	82	100	100	100
Chlordane														
50	0	15	0	100	0	100	0	100	22	100	35	100	92	100
100	0	30	0	100	0	100	0	100	20	100	33	100	100	100
Check (untreated)														
—	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[1]Data omitted because of contamination of the treated jars.

The results of the mothproofing tests conducted soon after treatment and four and five years later with Perthane- and DDT-treated cloths, respectively, are shown in table 3. Aging appeared to have had little or no deleterious effect on the treated cloths, for the degree of protection rendered was about the same before and after aging. The indications are that Perthane residues on woolen cloth will withstand aging as well as those of DDT (table 3).

The data collected on the contact and vapor exposures with black and furniture carpet beetle larvae are shown in tables 4 to 9 inclusive. The comparative contact residual toxicity of Perthane or Strobane to black carpet beetles was equal to that of DDT but slightly lower than that of chlordane and considerably lower than that of lindane. No significant mortality was obtained from 14-day continuous exposure to Perthane or Strobane when used at rates up to 200 mg. per square foot, whereas lindane at 50 mg. produced 80 percent mortality. The dead and moribund insect counts for Perthane, Strobane, DDT, and chlordane at 100 mg. per square foot were 38, 22, 35, and 100 percent in the order named (table 5).

Higher mortality and moribundity counts were obtained with furniture carpet beetle larvae exposed to the treated panels. The relative toxicity of Perthane and Strobane as compared with the other insecticides, however, was exactly the same as with the black carpet beetle larvae (tables 6 and 7).

The vapor action of Perthane or Strobane on the black and furniture carpet beetle larvae was of a low order, especially when compared with that of lindane and chlordane. At 50 mg. per square foot the mortality produced by the vapors of Perthane, Strobane, lindane, and chlordane over a period of 20 days with black carpet beetle larvae was 0, 22, 100, and 92 percent, respectively. With furniture carpet beetle larvae, it was 28, 22, 90, and 90 percent in the order named (tables 8 and 9).

Summary

LABORATORY evaluation tests indicated that Perthane and Strobane will protect woolen cloth against black carpet beetle larval damage when present at 0.50 percent by weight of the cloth or above. The minimum level of deposit required of DDT, which was used as the standard, was 0.10 percent or approximately one-fifth that required of Perthane or Strobane, based on the concentrations used in these tests. Like DDT, both materials are removed from woolen cloth by dry cleaning but will withstand

Table 9. — Percentage of dead (D) and dead and moribund (D+M) furniture carpet beetle larvae during a continuous 20-day exposure to insecticide vapors.

Residue	Exposure in days													
	1		3		7		9		13		15		20	
Mg./sq. ft.	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M	D	D+M
Perthane														
25	0	0	0	2	10	12	12	12	12	18	22	25	28	32
50	0	0	0	2	0	5	2	10	20	30	25	30	28	32
100	0	0	0	2	2	12	5	12	10	12	12	15	18	25
Strobane														
25	0	0	0	0	2	8	2	12	12	42	15	55	20	55
50	0	0	0	0	5	8	5	22	5	35	5	35	22	65
100	0	0	0	0	0	0	2	32	2	45	5	70	8	62
Lindane														
25	0	100	5	100	40	100	55	100	75	100	78	100	90	100
50	0	100	0	100	35	100	48	100	62	100	70	100	90	100
Chlordane														
50	0	35	2	98	18	100	38	100	62	100	75	100	90	100
100	0	45	0	98	15	100	20	100	62	100	80	100	90	100
Check (untreated)														
—	0	0	0	0	0	0	0	0	0	0	0	0	0	0

the open door to - - -

- Caustic soda
- Caustic potash
- Potassium Carbonate
- Potassium Persulphate
- Ammonium Persulphate
- Muriatic acid
- Nitric acid
- Soda Ash
- Sodium Bicarbonate
- Sodium Metasilicate
- Silicate of soda
- Silicate of potash
- Trisodium phosphate
- Metallic stearates
- Borax
- Boric acid
- Coconut oil
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- Red oil
- Sulfuric acid
- Stearic acid
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some washing if used at 3.0 percent by weight. Perthane-treated cloth after aging four years resisted insect damage about as well as freshly treated cloth.

Perthane and Strobane have a low order of residual contact and vapor toxicity to black and furniture carpet beetles. The residual toxicity produced by these two insecticides was equal to that of DDT but lower than that of lindane or chlordane.

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Cleaning Franklin Institute

(*From Page* 141)

team; 10 men on the general cleaning team; one man in Annex No. 1; two men and one woman in Annex No. 2; five women who clean offices; one matron; one foreman; and an assistant. Women work in all the offices because Mr. Dowler believes that women do a better job of cleaning rooms with furniture.

The foreman carries out all training of new and old employees, although Mr. Dowler and his assistant have periodic meetings which feature movies, talks and demonstrations. Safety movies are frequent at these sessions. The theory applied in training new workers is to give them a small part of a job at a time and build up gradually to the complete process. The supervisory personnel check and inspect regularly to keep all work up to a high level.

Mr. Dowler has each man's detail card printed for him and then puts him on his own. He hires the most experienced people possible and then lets them do things their own way. He feels that this makes for better and faster work and higher morale in the staff.

High pressure salesmanship is one of Mr. Dowler's chief "peeves" with manufacturers and distributors. He likes to find out for himself if a product will do a good job. Once he decides, no amount of expert selling will alter his decision. He told *Soap and Chemical Specialties*, "I've seen the salesman who supplies my all-purpose cleaner only once. He brought in a sample. I tried it and found it effective. Since then all our negotiations have been carried on by mail or telephone and I'll continue to use that product until I find something that does the job better. That's the way I like to do business."

All in all, the multi-faceted Franklin Institute appears to have inspired its maintenance department to search out the most efficient and scientific and simplest of products. The following different products are now used:

1 general cleaner
3 waxes
1 oil
2 window cleaning products
1 liquid soap
1 saddle soap
1 toilet bowl compound.

The use of a mere ten products for the huge area and variety of materials in The Franklin Institute is a scientific wonder in itself.

New, heavy duty British made soap dispenser now being distributed in the U.S. by J. G. Roger Chemical Co., Baltimore. Unit is available in Canada through Cartier Chemical Co., Lachine, Quebec. Unit fastens to any type wall surface by means of tamper-proof bracket that is drawn into and completely covered by back of dispenser. Exactly 0.8 cc of liquid soap is ejected by pushing up plunger. Unit tilts out from wall. There is only one moving part, and this is self-lubricating. The dispenser is pressure die-cast, averaging 1/8th inch thickness. Comes in gold plate or chrome finish on copper and nickel base. Mechanism is stainless steel and corrosion resisting aluminum alloy.

Two New Puro Products

Puro Co., St. Louis, Mo., introduced recently a new liquid garbage can deodorant and a new bowl cleaner. The latter is described as a stabilized emulsion of a solvent for organic deposits in a combination of muriatic acid with a detergent. It comes packed in quart bottles. The garbage can deodorant is said to also repel dogs, cats, and flies. comes packed 12 quarts to the case. $8.66 per case.

Al Saeks, head of Puro, who has been in the hospital, as reported in June SOAP, has returned to his office on a part time basis. He is recovering nicely, according to Howard Zachritz, Puro sales manager.

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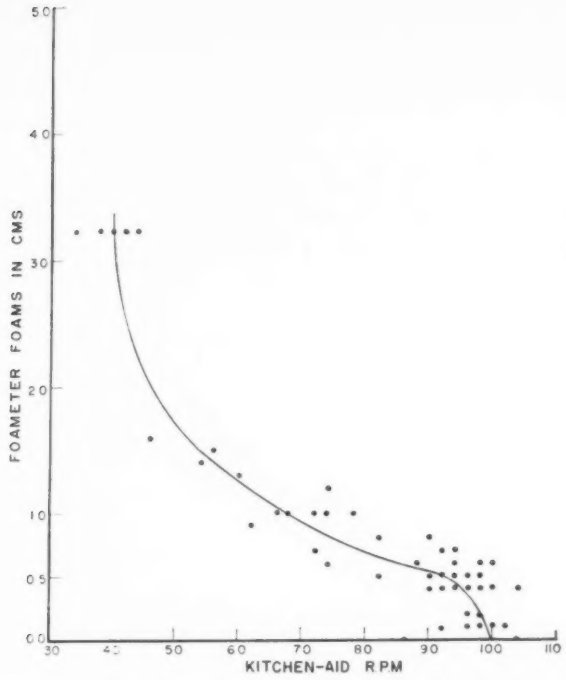


Figure 6. Correlation between Foameter and "Kitchen Aid".

Low-Foam Detergents

(*From Page 46*)

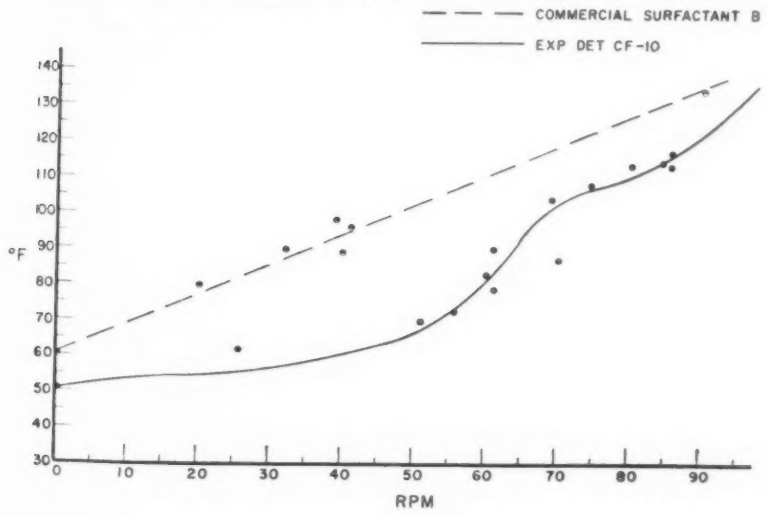
wide range of temperature and are described in Figure 7. These two materials probably produce as little foam as any surfactant currently available commercially; yet as shown here, their foams increase with decreasing temperature so that even these materials can be made to stall the rotor of the dishwasher. Of the two, Experimental Detergent CF-10 produced less foam at any particular test temperature; this has been confirmed in practice. The ideal situation, of course, would be to develop a low-foaming nonionic surfactant whose foam would be insensitive to temperature. However, this objective has not yet been reached.

(To be Concluded)

Table V. Reproducibility of Dishwasher as Foam Test Instrument

Surfactant	Rotations Per Minute (Averages for 5 Runs)	Standard Deviation
Commercial Surfactant A	39.6	3.9
Triton X-45	72.0	2.5

Figure 7



Nopco Buys Griffin

Nopco Chemical Co., Harrison, N. J., acquired recently the assets of Griffin Chemical Co., San Francisco manufacturer of petroleum sulfonates, naphthenic acid, emulsifiers, plasticizers, and polyvinyl acetate emulsion. In announcing the transaction Perc S. Brown, director and vice-president in charge of Nopco's western operations, called it an initial step in Nopco's planned expansion by acquisition on the Pacific Coast. Everett Griffin, who organized Griffin Chemical in 1935, will be associated with Nopco at Richmond, Calif., in an executive capacity.

Food Cleaning Bill

(*From Page 39*)

cleaners; (5) abrasive cleaners. Composition of each type and its application in packing plants were briefly outlined.

Veterinarians would like to see the chemical industry develop a spray for use in farm structures where livestock diseases prevail, Dr. Roger P. Link, of the department of veterinary medicine at the University of Illinois, declared. Dr. Link described the tremendous losses, running into the billions of dollars, incurred by farmers, due to diseases and parasites of cattle, swine, sheep, horses and poultry. Medicinal products are available for treating some, but not all, of these troubles, he said.

But there is nothing whatever available for spraying on barn walls to kill the eggs and larvae of parasites afflicting most livestock, according to Dr. Link. If such a spray were provided by chemical manufacturers, he felt that some of the losses could be avoided.

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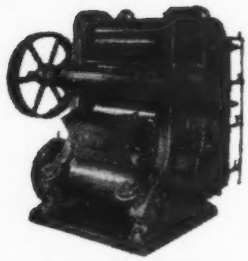

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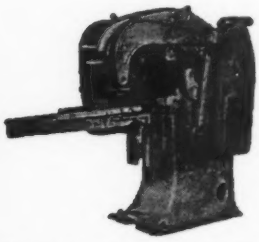

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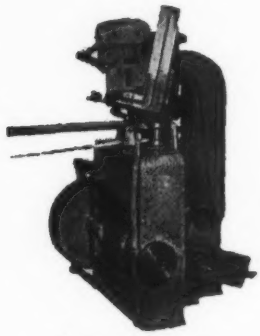

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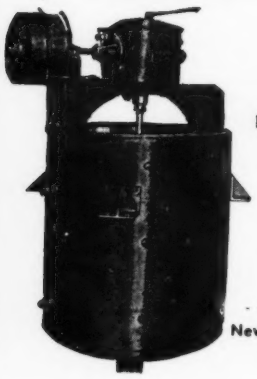

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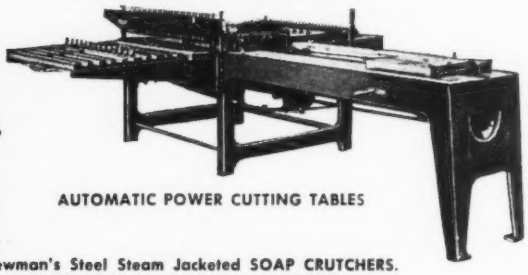

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(*Continued on Page* 191)

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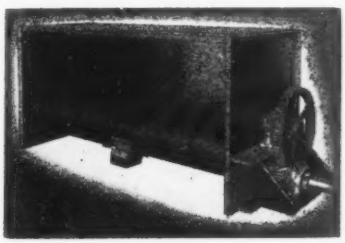

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Letters . . .

(*From Page 35*)

then, a large apology. If Dr. Decker decides to order reprints we can assure him that Figures 1 and 4 will be labeled and captioned correctly. Ed.

—— ★ ——

Up His Alley

Editor:

I have just read your editorial headed "Conventions" and it is right up my alley, especially the last sentence. Thanks a lot.

S. L. Mayham,
Executive vice-president,
Toilet Goods Assn.
New York

The last sentence of our editorial, which covered the contradictory likes and dislikes of convention goers, and the problems of trying to please all of them, read: "So, we humbly suggest that they do as they have always done, their best, and let those who don't like it go jump in the nearest lake." Ed.

—— ★ ——

Soap Distributors

Editor:

Please let me have the names and addresses of American distributors of transparent soaps, as mentioned and illustrated on pages 39 of the June issue.

Charles H. Casale
935 Louisa St.,
Williamsport, Pa.

"Pears' Soap" is distributed in the U. S. through A. & F. Pears, Ltd., 390 Park Ave., New York, headquarters of Lever Brothers Co. and is produced in England by Lever. "Neutrogena," made in Belgium by Ed. Fromont, Brussels, is distributed in the U. S. by Natone Co., Los Angeles 17, Calif. Colonia, Inc., 41 E. 42nd St., New York 17, N. Y., distributes "4711 White Rose Glycerine Soap" of Ferd Muhlens, Cologne, Germany. Ed.

—— ★ ——

Finger on Drums

Editor:

I have just received and read your attractive issue of July, 1955 and I, of course, was particularly interested in your "In Brief—As the Editor Sees It" editorial on page 33, entitled "Drums."

You have put your finger on the exact objective of our current advertising campaign to identify new steel containers. We have had no quarrel with the reconditioned drums which are reused because they have been relatively undamaged or disfigured in prior use or have been reconditioned and inspected with proper care.

Our campaign has been directed toward those who—to use your own editorial words—"had the nerve to ship their products in some of the junky drums we have seen."

The rest of your editorial is equally to the point that appearance in the small package field is properly evaluated in its relation to sales, but unfortunately this principle has not been universally applied to the products shipped in drums.

Livingston Keplinger,
President,
Steel Shipping Container Inst.
New York, N. Y.

—— ★ ——

Walker Heads Dallas Plant

W. R. Walker is in charge of the new Dallas plant and warehouse opened Aug. 1 by Texas Solvents and Chemicals Co., a member of Solvents and Chemicals Group, Chicago. He had been associated with the company's Houston plant since 1947.

Products available from the new plant include petroleum naphthas, normal and secondary alcohols, ketones, aromatic solvents, chlorinated solvents, waxes, stearates, weed killers, as well as Naval Stores such as pine oil, rosin, and rosin derivatives.

—— ★ ——

R-H Opens New Offices

The opening of a new office in New Orleans, La., was announced last month by R-H Products Co., Memphis, Tenn. The address is 407 Maritime Building, New Orleans 12, telephone MAgnolia 0655.

At the same time the firm announced removal of its Memphis office to new and larger quarters at 328 Cotton Exchange Building, telephone 5-7102. In charge of the Memphis office is Jack Crutcher. The firm makes a line of bulk washing powders and household chemical specialties.

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Coming Meetings

American Public Health Association, 83rd annual meeting, Municipal Auditorium, Kansas City, Mo., Nov. 14-18.

Association of American Soap & Glycerine Producers, Inc., 29th annual meeting, Waldorf-Astoria Hotel, New York, Jan. 25-27, 1956.

Chemical Market Research Association, Cavalier Hotel, Virginia Beach, Sept. 22-23; joint meeting with CCDA, Carter Hotel, Cleveland, Nov. 14-15.

Chemical Specialties Manufacturers Association, luncheon and general membership meeting, Savoy Plaza Hotel, New York, Sept. 28; 42nd annual meeting, Roosevelt Hotel, New York, Dec. 5-7; 42nd midyear meeting, Drake Hotel, Chicago, May 20-22, 1956.

Drug, Chemical and Allied Trades Section of the New York Board of Trade, Pocono Inn, Pocono Manor, Pa., Sept. 22-24.

Entomological Society of America, annual meeting, Netherlands Plaza Hotel, Cincinnati, Nov. 29-Dec. 2.

Exposition of Chemical Industries, Commercial Museum and Convention Hall, Philadelphia, Pa., Dec. 5-9.

National Agricultural Chemicals Association, annual meeting Essex & Sussex Hotel, Spring Lake, N. J., Sept. 7-9.

National Chemical Exposition, Public Autitorium, Cleveland, Nov. 27-30.

National Pest Control Association, 22nd annual convention, Denver, Colo., Cosmopolitan Hotel, headquarters hotel, Oct. 17-20.

National Sanitary Supply Assn., 33rd annual convention and trade show, Conrad Hilton Hotel, Chicago, Apr. 29, 30 and May 1, 2, 1956; eastern regional meeting, Penn Sheraton Hotel, Philadelphia, Oct. 11, 12.

Packaging Machinery Manufacturers Institute annual meeting, The Homestead, Hot Springs, Va., September 15-18, 1955; packaging machinery and materials exposition, Public Auditorium, Cleveland, O., Sept. 11-14, 1956.

Society of Cosmetic Chemists, seminar, Barbizon Plaza Hotel, New York, Sept. 15, 16; 10th anniversary meeting, Commodore Hotel, New York, Dec. 15.

Synthetic Organic Chemical Manufacturers Association, monthly luncheon meetings, Commodore Hotel, New York, Sept. 14, Oct. 11; annual dinner, Dec. 1.

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Tale Ends

JAKE Kahn, prez of Windsor Wax and v.p. of NSSA, has literally crashed into golf. As a first time golfer at the annual July 15 F. W. Hoffman & Co. outing at Llanerch Country Club, Phila., Jake knocked off first prize in the golf tournament! In the handicap division, of course. It seems that they used the Peoria scoring system and Jake received a handicap of his four worst holes plus 35. Shooting a neat 155, our hero ended up with a net of 63 or thereabouts and coped the gold plated doorknob.

* * * * *

Sir Geoffrey Heyworth, chairman of Unilever Ltd., has been the recipient of congratulations from soapers the world around. Sir Geoffrey was one of four new barons announced on the Birthday Honours List of Queen Elizabeth II on June 9 last. He joined Lever Brothers in Liverpool in 1912, holding positions in England and Canada until 1931 when he became a director of the parent company. He is also chairman of the United Africa Co. This high honor for Sir Geoffrey is interpreted by the English papers as greater recognition this year for chemical and allied activities in the Queen's birthday list.

* * * * *

Our golden medal for the month will go to Dr. Theodore R. Van Dellen, who writing in a recent issue of the New York Daily News, took up the cudgel in behalf of the safety of DDT. He labeled the rumors about DDT poisoning as vicious and hysterical. Well, maybe they were "rumors," —that is if you can call full page newspaper articles in serial form "'rumors." To us, they were stupid and inaccurate reporting plus the worst form of yellow journalism. But Dr. Van Dellen gets our medal just the same.

* * * * *

William Lee Sims II, new prez of Colgate, is a golfer of no mean ability, we hear. He's been associated with Colgate for over 30 years and has been playing golf since 1932. Over the years, he says that he has found nothing better for calming troubled nerves than a round of golf. Well, that may be, but there are other views on golf. It has been said of the game that it was invented by a mean old Scotsman years ago with the deliberate intent of ruining the disposition of the human race. Take your pick.

* * * * *

Common sense at last in attire for salesmen! Vulcan Containers, Inc., Chicago manufacturers of cans, pails and drums, has outfitted its sales staff with lightweight Latin American style shirt-coats meeting the requirements of cool attire and all the traditional propriety for business wear. If salesmen must wear coats, well then, says Vern McCarthy, prez of Vulcan, let's make 'em comfortable. He got the idea on a trip to Central America. Viva McCarthy!

* * * * *

Silicones, some times an ingredient of auto polishes and floor waxes, are now being used on the road surfaces of the New York State Thruway. The silicones when sprayed on concrete prevent water from soaking into the surface. This prevents or at least retards the freezing and thawing action which roughens the concrete surface and shortens road life. After extensive tests, the N. Y. State Thruway Authority has ordered all bridgedecks of the superhighway sprayed with the stuff.

* * * * *

The famous Colgate clock, standing majestically above the Hudson River in Jersey City,—which the Colgates will soon desert for Park Ave.,—recently had its face lifted for the first time since 1924. Its wooden hands had warped; its steel trusses rusted. Alternating dry and wet spells had Colgate mechanics bowlegged rearranging counter weights. So they gave the Old Girl, the largest clock in the world, a good going over,— aluminum core, porcelain steel facing, fluorescent lighting, et al. And now she's as good as new. While the clock was out of commission, Colgate received hundreds of phone calls asking how come.

* * * * *

Amusing episode in London. Our emissary dropped in on a grocer to buy up packages of new soap products. The grocer grumbled about handling coupons. Our emissary asked him how it would be if the soapers quit giving coupons and reduced their prices. The grocer snorted that such would never do. "After all," he said "look at poor old Levers. They only made a few million pounds profit last year. I don't see how they get by in competition with people like me." The grocer then turned to "a rather elegant young man" who had stood by, brief case in hand, while this conversation ensued, and said, "What can I do for you?" The c.y.m. replied "Oh, I'm from Lever Brothers."

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